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TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF PENNSYLVANIA,

AT ITS

THIRTY-THIRD ANNUAL SESSION,

HELD AT TITUSVILLE, MAY 10, 11 and 12, 1882.

VOLUME XIV.

PUBLISHED BY THE SOCIETY.

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By a Resolution adopted at the session of 1853, the Committee of Publication was instructed to prefix to each volume of the *Transactions* a note, or statement, to the effect that the Medical Society of the State of Pennsylvania does not endorse or sanction, by its authority, the facts or opinions contained in any address or report made to it, or which is directed to be inserted in its published Transactions.

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OF THE

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA,

AT ITS

THIRTY-THIRD ANNUAL SESSION,

HELD AT

TITUSVILLE, MAY 10, 11, AND 12, 1882.

THE Medical Society of the State of Pennsylvania met in the Armory, Wednesday, May 10th, at 10 A.M.

Dr. J. L. ZIEGLER, of Lancaster, President, called the Society to order, and prayer was offered by Rev. J. A. Maxwell.

The following officers were present: Vice-Presidents, Dr. Joseph A. Reed, of Dixmont, Dr. W. S. Roland, of York; the Permanent Secretary, Dr. William B. Atkinson; and the Treasurer, Dr. Benjamin Lee, of Philadelphia. The Permanent Secretary read the list of delegates and members. The register is as follows:—

Allegheny County.

J. H. CHRISTIE,	Allegheny City.
WM. H. DALY,	Pittsburgh.
JOHN S. DICKSON,	"
EZRA DYER,	"
THOS. J. GALLAHER,	"
J. A. LIPPINCOTT,	"
THOS. MABON,	Allegheny City.
R. B. MOWRY,	"
JAS. W. NEELY,	Pittsburgh.
A. M. POLLOCK,	"

Permanent Member:—

D. A. HENGST,	Pittsburgh.

Armstrong County.

J. E. Hall,	Parker.
S. A. S. Jessop,	Kittanning.
J. T. McCulloch,	Freeport.
R. G. Ralston,	Curwensville.
A. G. Thomas,	Freeport.

Permanent Members:—

M. H. Alter,	Kittanning.
J. G. Cunningham,	"

Berks County.

H. H. Herbst,	Reading.
W. F. Muhlenberg,	"

Blair County.

Wm. R. Findley,	Altoona.

Bradford County.

Ezra P. Allen,	Athens.
S. F. Coit,	Laporte (Sullivan Co).
Geo. F. Horton,	Tarrytown.
Edward Mills,	Ulster.

Butler County.

F. V. Brooks,	Breakneck.
David Harper,	Karns City.
B. A. Henlen,	North Hope.
Harry R. Wilson,	Portersville.

Cameron County.

E. O. Bardwell,	Emporium.

Carbon County.

R. Leonard,	Mauch Chunk.
J. B. Tweedle,	Weatherly.

Centre County.

Philip S. Fisher,	Zion.

Chester County.

G. G. Groff,	Lewisburg (Union Co).
Edward Jackson,	West Chester.
Isaac Massey,	"

Clarion County.

WM. FOSTER,	St. Petersburg.
S. F. MCCOMB,	"
A. M. REID,	Clarion.
I. J. WIREBACK,	St. Petersburg.

Permanent Members:—

J. W. LEADENHAM,	Knox.
J. FRANK ROSS,	Clarion.

Clearfield County.

Permanent Member:—

W. J. SMATHERS,	Dubois.

Crawford County.

DAVID BEST,	Meadville.
G. L. CLARK,	Centreville.
JOHN C. COTTON,	Meadville.
E. H. DEWEY,	"
GEO. O. MOODY,	Titusville.
ALMIRA F. RHODES,	Cambridgeton.

Permanent Members:—

GEO. W. BARR,	Titusville.
W. A. BAKER,	Hydetown.
J. P. HASSLER,	Cochranton.
WM. VARIAN,	Titusville.
T. J. YOUNG,	"

Cumberland County.

R. L. SIBBET,	Carlisle.

Dauphin County.

W. F. BISHOP,	Harrisburg.
G. F. MATTER,	Williamstown.
J. W. PARK,	"

Delaware County.

FRANCES N. BAKER,	Media.

Elk County.

W. B. HARTMAN,	St. Mary's.
C. G. WILSON,	"

Erie County.

W. C. Evans,	Erie.
H. O. Mackrees,	Corry.
M. Pickett,	"
O. C. Sherwood,	Union City.
J. L. Stewart,	Erie.
D. R. Waggoner,	McKean (Bradford Co).

Permanent Members:—

A. S. Bonsteel,	Corry.
M. C. Dunigan,	Erie.
C. B. Kibler,	Corry.
Alvin Thayer,	Erie.

Fayette County.

John W. Worrell,	Bellevernon.

Indiana County.

S. R. Rutledge,	Blairsville.
S. L. Wiggins,	Black Lick.

Permanent Member:—

W. T. Larimer,	West Lebanon.

Jefferson County.

W. F. Matson,	Brookville.
W. W. Woods,	Stanton.

Permanent Member:—

R. B. Brown,	Summerville.

Lancaster County.

John L. Atlee,	Lancaster.
A. M. Miller,	Bird-in-Hand.

Lycoming County.

W. C. Weymouth,	Renovo.

McKean County.

A. R. Baker,	Duke Centre.
W. F. Conners,	"
A. F. Groves,	Bradford.
H. L. McCoy,	Smithport.
F. H. Murdoch,	Bradford.

Permanent Members:—

J. C. Elliot,	Bradford.
Olin S. Wright,	"

Mercer County.

H. M. Bishop,	Sharon.
J. W. Mehard,	Mercer.
J. H. Reed,	Sharon.

Permanent Members:—

A. T. Clark,	Greenville.
E. Griswold,	Sharon.
S. Heilman,	"
J. P. Hosack,	Mercer
L. G. Meyer,	Pardoe.
B. E. Mossman,	Greenville.

Mifflin County.

W. T. Parcels,	Lewistown.

Permanent Member:—

Thos. H. Van Valzah,	Lewistown.

Montour County.

J. P. Hoffa,	Washingtonville.
S. S. Schultz,	Danville.

Permanent Members:—

J. D. Mausteller,	Danville.
Isaac Pursell,	"

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Traill Green,	Easton.

Philadelphia County.

Wilson Buckby,	Philadelphia.
Chas. E. Cadwalader,	"
A. C. Deakyne,	"
Albert Fricke,	"
W. Goodell,	"
Addinell Hewson,	"
J. Hearn,	"
John G. Lee,	"
S. R. Knight,	"
Henry Leefmann,	"
Wm. S. Little,	"
Charles K. Mills,	"
E. E. Montgomery,	"
Carl Seiler,	"

John V. Shoemaker,	Philadelphia.
Henry H. Smith,	"
Charles S. Turnbull,	"

Schuylkill County.

John T. Carpenter,	Pottsville.

Venango County.

John E. Blaine,	Pleasantville.
A. F. Coope,	Oil City.
Robt. Crawford,	Cooperstown.
T. W. Egbert,	Oil City.
Wm. Foster,	St. Petersburg.
T. C. McCulloch,	Oil City.
E. W. Moore,	Franklin.

Permanent Members:—

S. H. Benton,	Oil City.
F. F. Davis,	South Oil City.
S. Gustine Snowdon,	Franklin.
J. A. Ritchey,	Oil City.
W. Lowrie Whann,	Franklin.

Washington County.

Q. C. Farquhar,	East Bethlehem.

Warren County.

H. L. Bartholomew,	Warren.
J. L. Burroughs,	Sugar Grove.

Permanent Member:—

John Curwen,	Warren.

Westmoreland County.

G. L. Humphreys,	Irwin Station.
Jas. McConaughy,	Mount Pleasant.
J. I. Marchand,	Irwin Station.
D. W. Miller,	Adamsburg.
J. E. Rigg,	Stoners.

Ex-officio Delegates.

J. L. Ziegler, *President*, Mount Joy, Lancaster Co.
Jos. A. Reed, *Vice-President*, Dixmont, Allegheny Co.
W. S. Roland, *Vice-President*, York, York County.
Wm. B. Atkinson, *Permanent Secretary*, Philadelphia.
Benjamin Lee, *Treasurer*, Philadelphia.
Wm. Anderson, *Judicial Council*, Indiana, Indiana Co.

Dr. George O. Moody, of Titusville, welcomed the Society on behalf of the profession and citizens:—

Mr. President, and Gentlemen of the Pennsylvania State Medical Society: It will be a pleasant reminiscence that the honor of greeting you on this your first meeting in Crawford County has been assigned to me. As the representative of the Crawford County Medical Society, I am to welcome you as an organized body of workers in the broad field of theoretical and practical medicine. As the representative of the citizens of Titusville, I am to welcome you individually, trusting, notwithstanding our recent calamity, which, to our inexpressible regret, must subject you to much inconvenience, that your brief visit among us will not be entirely destitute of social enjoyment, and confident that our own anticipations of pleasure and profit will be fully realized. We can present to you, gentlemen, for your admiration, no ancient historical records of our city, whose history has not been written, we trust not yet lived. We can point you to no enchanting natural scenery to delight the eye, no fine architectural designs nor rare gems of art to please your æsthetical taste. Were you here only in pursuit of recreation and pleasure, these would be fatal defects. I am told that travellers in foreign lands are wont to go into ecstasy at the sight of ancient ruins. If modern ruins will answer your purpose you may have a free show, and feast your eyes to your heart's content. But neither our modern ruins nor our want of natural scenery and institutions of public interest will deter us from giving the most profound attention to your words of wisdom, feeling, as we do, that the chief object of your meeting here is to re-examine the past history and present condition of medicine, to place on record whatever has been proven and found valuable, and to reject whatever has failed to stand the crucial test of scientific research and practical experience. You are here also to reach out into unexplored regions of physiology, pathology, surgery, therapeutics, and all the branches, direct and collateral, of medicine; to gather in new facts and develop new theories, in their turn to be proven true or false by future investigations. Our profession has the right to demand of all such organizations as this, that, at every meeting, it shall add something to its general fund of scientific and practical knowledge; shall help to mark out the boundaries of its established truths, and elevate it to the dignity of a fixed science. But we are not medical men only, nor is the debt we owe due alone to our profession. That authority from which our Society has received its corporate privileges has a right to our allegiance, and to demand of us, for the public good, a knowledge of those sanitary laws necessary to protect the public health and add to the sum of human life. So also does that higher law—the source of all human law—make it incumbent upon us not only to heal the diseases and relieve

the sufferings of our fellow-creatures, but to warn the masses throughout the entire State, and especially those in whose midst the Society meets from year to year, where they may look for and how they must contend against those unseen pestiferous poisons which, like the breath of the deadly Upas, silently creep into the homes and bed-chambers of their unconscious victims, filling the land with the lamentations of Rachels, and entailing upon thousands a life of disease and misery. I believe this education of the people in hygienic and sanitary laws becomes more and more imperative upon us as year by year preventive medicine advances to the front, and becomes the pioneer of the curative art. If we are not our brothers' keepers, the day is not distant when an enlightened public opinion will demand of us, as the conservators of the public health, that we so instruct our brothers and fellow-citizens as to enable them to become their own keepers and the keepers of those whom nature's laws have placed under their protection. Confident, from the past history of our Society, that it will neglect none of its duties to the medical profession, I sincerely hope that a voice will go out from this meeting upon the proper construction, heating, ventilation, and sewerage of our homes, so strong and so clear that it will be heard and heeded by every inhabitant of our country. Again, gentlemen, allow me to bid you a hearty welcome and a God-speed in the labors before you.

Dr. Wm. Varian, of Titusville, Chairman of the Committee of Arrangements, reported the programme for the entire session.

On motion, the programme was adopted.

On motion of Dr. W. B. Atkinson, it was agreed that each county delegation should select its member of the Committee on Nominations immediately after the morning session, and report as the first order of business in the afternoon.

Dr. Henry H. Smith, of Philadelphia, offered the following:—

Resolved, That this Society *reaffirms* its adhesion to the Code of Ethics as adopted by the American Medical Association.

Resolved, That the delegates of this Society to the meeting of the American Medical Association, in 1882, be instructed to *enter an early protest* against the admission to the Association of the delegates of any State or other society that objects to and does not observe said Code of Ethics in all its recommendations.

After remarks by many of the most prominent members in favor of this action, the Secretary read the following from the Philadelphia County Medical Society:

Philadelphia, April 20, 1882.

Oscar H. Allis, M. D., Corresponding Secretary Penna. State Medical Society.

Dear Sir: At the stated meeting of the Philadelphia County

Medical Society, held April 19, 1882, the following resolutions were adopted:

Resolved, That this Society reaffirms its adherence to the principles of the Code of Ethics of the American Medical Association, and declares that, in its opinion, for a physician to extend professional recognition to irregular practitioners is to patronize and encourage irregular practice; and is alike inconsistent with honesty of purpose and the pursuit of medicine as a science.

Resolved, That this resolution be referred to the Pennsylvania State Medical Society at its next annual meeting.

I have the honor of being very truly yours,

H. AUGUSTUS WILSON, M. D., *Corresponding Secretary Philadelphia County Med. Soc.*

The vote being taken, the resolution was *unanimously* adopted.

On motion of Dr. SMITH, the Secretary was instructed to forward to the Chairman of the Committee of Arrangements of the American Medical Association, at St. Paul, Minn., a copy of this minute.

The Secretary read the following communication, which, on motion, was laid on the table.

PITTSBURGH, May 8, 1882.

Dr. Jacob L. Ziegler, President of Pennsylvania State Medical Association.

DEAR SIR: In behalf of the Woman's National Christian Temperance Union, I write to ask that, if possible, the convention over which you preside will give some attention to the subject of the abuse of "alcoholic stimulants." We would like to see the whole matter fairly and honestly discussed, and whatever action they deem proper taken.

We think it not too much to ask from you, as a society, at *least* a word of warning against the very general use of "Bitters" (which by chemical analysis we know to be so largely alcoholic) and of stimulants by women, as well as the careless, and often unnecessary, prescriptions of alcohol by so many physicians in regular standing.

We think if all were aware of the extent of their influence and responsibility in this matter, they would at least give it very earnest thought. In all our work, even in attempting to introduce scientific temperance instruction into our schools, we are met with the statement "the best physicians prescribe alcohol freely, and do not, at all, class it among *poisons* as temperance people do." We desire to negative this with *authority*, not only from physicians of eminence abroad, but from those at home; for we think a prophet should *not* "be without honor in his *own* country."

I presume your position, as president, does not afford you the opportunity to present my request very directly; but if you will consider it with favor, and, if possible, arrange that some action

may be taken by the Pennsylvania Medical Society, I shall feel much obliged.

If not out of order, I shall even be willing that you read my letter before the convention, if that is the best that can be done.

I have written Drs. R. S. Sutton, W. H. Daly, O. L. Miller and T. H. Davis, of this city, requesting their influence.

Yours truly,

MRS. JOSEPH D. WEEKS,
Superintendent National Department W. C. T. U.

A motion by Dr. T. J. Gallaher, of Pittsburgh, to reconsider this action, was negatived.

An invitation from Dr. John Curwen to visit Warren Insane Asylum on Friday was declined for want of time.

On motion of Dr. Atkinson, it was agreed to accept the invitation for Saturday morning.

Dr. Chas. K. Mills, of Philadelphia, offered the following:—

Resolved, That Rule IX. of the Rules of Order be amended so as to allow a suspension of the rules by a two-thirds vote of the members present.

Under the law, this was laid over for one year.

The Committee on a State Board of Health reported:—

The Committee on State Board of the Health beg leave respectfully to report—

That the expectations which they felt encouraged to hold out at the last meeting of this Society, of the speedy passage of a law creating a "State Board of Health," have been disappointed. There is the less reason for regret in this failure on the part of the Legislature to redeem its character for enlightenment and intelligence, from the fact that the bill which failed was substituted for the bill prepared by this committee, and emanated from an unprofessional source. This latter fact was probably the cause of its failure. In obedience to the standing resolution of the American Medical Association, your Committee feel that this important measure should still be urged upon the Legislature of this Commonwealth.

WILLIAM B. ATKINSON.
BENJAMIN LEE.

On motion of Dr. John T. Carpenter, of Pottsville, the committee was continued, with instructions to press upon the Legislature the importance of the subject.

On motion of Dr. H. Leffmann, of Philadelphia, thanks were tendered to Dr. Curwen for his invitation to the Warren Asylum.

On motion of Dr. B. Lee, it was

Resolved, That the officers of the Library be instructed to

make use of the appropriate title of this Society, namely, "The Medical Society of the State of Pennsylvania," in all official documents, reports, headings or titles.

Resolved, That the name of the Library of this Society be changed to "The Library of the Medical Society of the State of Pennsylvania."

The Society then adjourned until 2 P. M.

Afternoon.

The Society reassembled at 2 P. M.

The amendment to the Constitution, offered last session by Dr. R. S. SUTTON, of Pittsburgh, was considered.

Sec. 2, Art. III., to read, "Every member of a county medical society in Pennsylvania shall, so long as he is in good standing, be a member of the State Medical Society, and a delegate to its annual session."

After some remarks the amendment was rejected.

On motion of Dr. TRAILL GREEN, the minutes of the morning session were read and adopted.

The address in Obstetrics, by Dr. R. S. SUTTON, was read by Dr. DALY. The subject was "Abdominal and Pelvic Surgery on the Continent of Europe."

On motion of Dr. J. L. ATLEE, of Lancaster, the paper was referred to the Committee of Publication.

Dr. S. S. SCHULTZ, of Danville, read a paper on *Gheel*, or the insane colony of that locality.

On motion, the paper was referred to the Committee of Publication.

Papers were then read by Dr. J. V. SHOEMAKER, of Philadelphia, on "The Oleates and Oleopalmitates in Skin Diseases;"

Dr. TRAILL GREEN, of Easton, on "Medicine and Something More;"

Dr. E. E. MONTGOMERY, of Philadelphia, on "Procidentia Uteri, and its Relief;"

Dr. JOHN G. LEE, of Philadelphia, on "Criminal Homicides in the City of Philadelphia during a Decade: together with the Moral and Medico-legal Duties of Practitioners of Medicine in Murder Cases."

These papers were severally referred to the Committee ot Publication.

Dr. HENRY LEFFMANN, of Philadelphia, offered a resolution that the discussion of each paper shall take place immediately after the reading of the same.

After some discussion, the President decided that the resolution was out of order.

An appeal having been taken from this decision, the Chair was sustained by a vote of 29 ayes, 25 nays.

The paper of Dr. SHOEMAKER was then discussed by Drs. T. J. GALLAHER, C. S. TURNBULL, R. A. EGBERT,——FOSTER and the author.

Dr. GALLAHER made some remarks on the paper by Dr. MONTGOMERY.

The case of Dr. J. C. GREENLEY *vs.* Dr. J. C. COTTON was presented, and referred to the Judicial Council.

On motion of Dr. JOHN CURWEN, Dr. W. P. HAZELTINE, of Warren, was invited to a seat with the Society.

On motion the Society adjourned until evening.

Evening.

The Society assembled at 8 P. M., in the Academy of Music. Vice-President Dr. J. A. REED presiding.

The President, Dr. J. L. ZIEGLER, delivered the Annual Address, his subject being the "Equality of the Sexes."

On motion of Dr. J. L. STEWART, of Erie, the thanks of the Society were tendered to Dr. ZIEGLER, and a copy of the address was requested for publication.

The Society adjourned until 9 A. M. Thursday.

THURSDAY, May 11th.

The session was opened at 9 A. M. with prayer by Rev. Henry Purdon.

The Permanent Secretary then read the names of the Committee of Nominations :—

Allegheny, Dr. A. M. POLLOCK; Armstrong, J. G. McCULLOCH; Beaver, A. G. THOMAS; Berks, H. H. HERBST; Blair, W. R. FINDLEY; Bradford, E. P. ALLEN; Butler, B. A. HENLEN; Cameron, E. O. BARDWELL; Carbon, J. C. TWEEDELL; Chester, EDW. JACKSON; Clarion, J. W. LEADENHAM; Clearfield, W. J. SMATHERS; Crawford, E. H. DEWEY; Cumberland, R. L. SIBBET; Dauphin, W. T. BISHOP; Elk, W. B. HARTMAN; Erie, J. L. STEWART; Fayette, J. W. WORRELL; Indiana, S. L. WIGGINS; Lancaster, J. L. ATLEE; Lycoming, W. C. WEYMOUTH; McKean, F. H. MURDOCH; Mercer, J. H. REED; Mifflin, W. H. PARCELS; Montour, S. S. SCHULTZ; Northampton, P. B. BREINIG; Philadelphia, J. V. SHOEMAKER; Schuylkill, J. T. CARPEN-

TER; Venango, R. CRAWFORD; Warren, J. L. BURROUGHS; Washington, Q. C. FARQUHAR; Westmoreland, J. MCCONAUGHY; York, W. S. ROLAND.

The reports of county societies having been called for, several were received and referred to the Committee of Publication.

On motion, it was agreed that those not reporting should be allowed until the 1st of July to forward their reports.

On motion of Dr. GALLAHER, the report on Schedule for Examination of Students was postponed until after the reading of the address in Hygiene.

The annual report of the treasurer, Dr. B. LEE, was read, and referred to Drs. T. J. GALLAHER and I. PURSELL as auditors.

Dr. CHARLES S. TURNBULL, on behalf of Dr. LAURENCE TURNBULL, of Philadelphia, read the report of the Committee on Defective Hearing of Locomotive Engineers, etc.

The address on Mental Disorders was read by Dr. CHARLES K. MILLS, of Philadelphia.

On motion, both papers were referred to the Committee of Publication.

The President announced that, after a careful consideration of the subject, he had concluded to permit the discussion of each paper immediately after its reading.

By request, a paper by Dr. A. T. LIVINGSTON, of Philadelphia, was read in lieu of the discussion of Dr. MILLS' address. It was entitled "Suggestions Regarding Legislation for the Benefit and Protection of the Insane."

Dr. W. H. DALY, of Pittsburgh, read a paper entitled "Some Questions Relating to Tonsillotomy." He alluded to the belief as to non-virility after removal of the tonsils, and adduced several cases where procreation had followed.

Dr. A. HEWSON, of Philadelphia, also mentioned several cases where children had been born to parents after the operation, and in one case both parents had been operated upon.

Dr. J. L. ATLEE, of Lancaster, spoke of the old method by ligature and canula, and of the origin of the Fahnestock instrument, he having suggested it to Dr. Fahnestock, who shortly afterwards embodied the ideas in an invention, but unfortunately took out a patent for it. Dr. Atlee had the original instrument, and had removed an immense number of tonsils with it. Concerning virility, he had two children, both operated upon, and both with eleven children.

Dr. Henry H. Smith, of Philadelphia, deprecated the fear of hemorrhage. A little cold water speedily stopped the flow. To cut the carotid you must go through the side of the pharynx, which was not likely, unless by the use of an objectionable instrument. But a small portion need be removed.

Dr. Traill Green, of Easton, spoke of the impairment of hearing after the operation.

Dr. Wm. S. Little, of Philadelphia, said that among the numerous general symptoms associated with hypertrophy of the tonsils, Dr. Daly spoke of drooping of the eyelids. He would like to inquire how frequently this is present, whether restricted to the upper eyelid or lower? Is the cause due to reflex irritation, or to inflammation of the conjunctival sac from inflammation reaching it through the lachrymal passages? The stupid expression of the face, and appearance of lack of interest, is more likely to be due to some optical defect.

Dr. J. A. Lippincott, of Pittsburgh, read a paper entitled "Abscess of the Orbit."

Dr. C. K. Mills thought the elevation of the temperature of the locality would be an aid in the diagnosis.

Dr. Charles S. Turnbull, of Philadelphia, read a paper entitled "Powdered Boracic Acid in the Treatment of Chronic Purulent Inflammation of the Middle Ear."

Dr. Edw. J. Jackson, of West Chester, read a paper entitled "A Comparative Study of the Action of Certain Mydriatic Alkaloids."

Dr. Joseph Hearn, of Philadelphia, read a paper entitled, "Nature and Treatment of Rodent Ulcers."

After some discussion by Messrs. Shoemaker and Little, on the last paper, on motion, each of the papers read was referred to the Committee of Publication.

On motion, the Society adjourned until 2 P.M.

Afternoon.

The President called the Society to order at 2 P. M.

The Nominating Committee reported as follows:—

Officers for 1883:

President.

Wm. Varian,	Titusville.

Vice-Presidents.

1st, Addinell Hewson,	Philadelphia.
2d, E. P. Allen,	Athens.

3d, A. Thayer,	Erie.
4th, A. M. Miller,	Bird-in-Hand.

Permanent Secretary.

Wm. B. Atkinson,	Philadelphia.

Assistant Secretary.

Edward J. Jackson,	West Chester.

Corresponding Secretary.

John G. Lee,	Philadelphia.

Treasurer.

Benjamin Lee,	Philadelphia.

Committee of Publication.

W. B. Atkinson,	Philadelphia.
Benj. Lee,	"
John V. Shoemaker,	"
John G. Lee,	"
Albert Fricke,	"
Chas. S. Turnbull,	"
Edw. J. Jackson,	West Chester.

Judicial Council for Three Years.

J. L. Stewart,	Erie.
S. S. Schultz,	Danville.
Henry H. Smith,	Philadelphia.

Place of meeting, Norristown. Time, second Wednesday of May, 1883.

Resolved, That Dr. Hiram Corson, of Montgomery County, be Chairman of the Committee of Arrangements, and that Montgomery County Medical Society is hereby instructed to name his colleagues on said committee.

The Censors to remain as for last year, adding R. B. Brown, of Jefferson County, in 10th District, and H. L. Bartholomew, of Warren County.

Delegates to the American Medical Association.

Wm. Varian,	Titusville.
A. Seip,	Easton.
Jacob Hay,	York.
A. F. Balmer,	Brookville.
S. R. Rutledge,	Blairsville.
Jos. Swartz,	Duncannon.
H. St. Clair Ash,	Philadelphia.
M. Pickett,	Corry.

T. J. Gallaher,	Pittsburgh.
J. W. Fulton,	New London.
M. L. Herr,	Lancaster.
John T. Carpenter,	Pottsville.
E. H. Coover,	Harrisburg.
M. H. Alter,	Kittanning.
I. Pursell,	Danville.
A. M. Pollock,	Pittsburgh.
W. H. Jennings,	Arnot.
Boyd Emory, Sr.,	Dunningsville.
W. B. Ulrich,	Chester.
H. M. Nipple,	Freeburg.

Delegates to the Medical and Chirurgical Faculty of Maryland.

J. L. Atlee,	Lancaster.
S. M. Ross,	Altoona.
W. S. Roland,	York.
W. T. Bishop,	Harrisburg.

Delegates to the Ohio State Medical Society.

D. R. Waggoner,	McKean.
R. Crawford,	Cooperstown.
N. W. Hoover,	North Hope.

Delegates to New Jersey State Medical Society.

Traill Green,	Easton.
D. W. Bland,	Pottsville.
Isaac Massey,	West Chester.

Delegates to West Virginia State Medical Society.

J. S. Van Voorhis,	Bellevernon.
W. S. Duncan,	Brownsville.
W. J. Asdale,	Pittsburgh.

Delegates to Delaware State Medical Society.

C. E. Woodward,	West Chester.
W. B. Ulrich,	Chester.
W. W. Dale,	Carlisle.

Delegates to Massachusetts State Medical Society.

E. P. Allen,	Athens.
E. E. Montgomery,	Philadelphia.
W. Buckby,	"

On motion of Dr. Atkinson, the report, with the exception of the Censors, was accepted and adopted.

On motion of Dr. Shoemaker, the Censors as nominated

were elected, and those County Medical Societies not represented in their Censorial District were directed to select their own representative.

The Auditors reported that they had examined the Treasurer's accounts, and found them correct.

On motion, the report was accepted, and the Auditors were discharged.

On motion of Dr. J. L. STEWART, of Erie, it was

Resolved, That each County Medical Society be instructed to report, with its list of members, the place and date of graduation, or other requirements for practice, of each, as registered under the action of the new law.

On motion of Dr. BENJAMIN LEE, of Philadelphia, it was

Resolved, That a committee of three be appointed to memorialize the Legislature of this State with reference to amending and codifying the lunacy laws now on our statute books.

The committee was appointed as follows: Drs. B. LEE, chairman; JOSEPH A. REED, of Dixmont, and S. S. SCHULTZ, of Danville.

A bill from Dr. O. H. ALLIS, Chairman of Committee on Schedule for Examination of Students, amounting to $5.90, was ordered to be paid.

On behalf of Dr. ALFRED L. KENNEDY, of Philadelphia, the Permanent Secretary read the following:—

Whereas, The House of Representatives at Washington has asked the U. S. Commissioner of Agriculture for information "whether any portion of the United States is adapted to the growth of the cinchona tree," and

Whereas, Should the same be practicable, the introduction of the tree and its cultivation as a native source of quinia and the other active principles of the bark, are demanded by the highest consideration of public policy, therefore

Resolved, That the Medical Society of the State of Pennsylvania hails with satisfaction the adoption of measures designed to ascertain the capability of the United States to produce the cinchona, and calls upon the National Department of Agriculture to present at an early day the information asked for by the House of Representatives.

Resolved, That the delegates of this Society to the American Medical Association be and they are hereby instructed to lay the above preamble and resolution before that body at its next session, and if, in the opinion of the delegates, it be desirable, then to request similar action on the part of the Association.

On motion, the preamble and resolutions were adopted.

The Committe of Publication presented a report as follows:—

The Committe of Publication beg leave respectfully to report that they had printed sixteen hundred (1600) copies of the Transactions for 1881, constituting a volume of 424 pages, bound in cloth, according to a resolution adopted at the last meeting, containing one, lithographic plate, twenty-one cuts, six charts, and four tables at an expense of fourteen hundred and sixty-two dollars and seventeen cents (1,462.17). Of these they have distributed to

County Medical Societies,	1472	copies.
State " "	38	"
Library of Congress,	1	"
Library of American Medical Association,	1	"
State Boards of Health, etc.,	22	"
National Board of Health,	1	"
Medical and other Journals,	38	"
Secretary,	1	"
Treasurer,	1	"
Archives for Binding,	2	"
Disposed of by Sale,	1	"
Remaining on hand in custody of Librarian of the Phila. County Med. Society,	22	"
Total,	1600	copies.

It is a gratifying fact that the number of copies distributed to County Medical Societies, during the past year, exceeds that distributed during the year previous by eighty-five.

The Committee regret deeply the unavoidable delay in publishing this volume. For this there were three causes: First, The time occupied in binding; second, The late period at which certain of the papers were received; and third, The time required for preparing the unusual number of illustrations.

On behalf of the Committee.

WILLIAM B. ATKINSON.
BENJAMIN LEE.
WILLIAM GOODELL.

On motion, the report was received, and ordered to be entered in the minutes.

Dr. W. F. Muhlenberg, of Reading, read the "Address in Hygiene." His subject was "Germs."

The schedule of subjects, etc., for examination of students was called up. An amendment or minority report was offered by Dr. Findley; and, after discussion, on motion of Dr. J. L. Atlee, the whole matter was referred to the Committee for further report.

Dr. W. S. Little, of Philadelphia, read a paper on "Sympathetic Traumatism of the Eye."

A paper on "Treatment of Membranous Croup," by Dr. W. B. Ulrich, of Chester, was read by title.

Dr. Henry Leffmann, of Philadelphia, read a paper entitled "Medical Relation of Prevailing Adulterations."

Dr. B. E. Mossman, of Greenville, read a paper entitled "Puerperal Malarial Fever."

Dr. Carl Seiler, of Philadelphia, read a paper entitled "Intra-nasal Surgery," detailing the method of treating growths, as polypi, etc., and describing his instruments and a new electrical engine.

Dr. Addinell Hewson, of Philadelphia, made some remarks on "Paper as a Vehicle for Preserving Soap for Surgical Purposes." He exhibited specimens prepared in Titusville.

On motion, the several papers which had been read, were referred to the Committee of Publication.

On motion of Dr. Gallaher, the communication from the Woman's Temperance Union was taken up and referred to a committee, to report in 1883. Committee: Drs. Gallaher, W. H. Daly and T. Green.

The Judicial Council presented the following report:—

The Judicial Council respectfully reports to the Medical Society of the State of Pennsylvania, that they have heard the appeal of John C. Cotton from the Crawford County Medical Society, in the matter of Greenlee *vs.* Cotton, and have unanimously dismissed the appeal, and affirmed the action of the Crawford County Medical Society.

It also reports the following resolutions to the consideration of the Society, viz.:

Whereas, The 4th Section of the Medical Registration Act of Pennsylvania, passed June 8, 1881, requires that any person who may desire to commence the practice of Medicine or Surgery in this State after the passage of this Act, having a medical diploma issued, or purporting to have been issued, by any College, University, Society, or Association in another State or foreign country, shall lay the same before the Faculty of one of the medical colleges or universities of this Commonwealth for inspection; and the Faculty, being satisfied as to the qualifications, and the genuineness of the diploma, shall direct the Dean of the Faculty to endorse the same, after which such person shall be allowed to register as required by Section 2 of the same Act, therefore be it

Resolved, 1. That the Medical Society of the State of Pennsylvania requests the different Faculties that may have applications made to them under the provisions of Section 4 of the Medical Registration Act of Pennsylvania to give each and every

applicant a fair, full and thorough examination in all the branches taught in their own school, and required of their own students, before endorsing their diplomas, and refuse to endorse any diploma unless the holder is well qualified to practice his profession.

2. That the Faculties should make such arrangements, and appoint such times as they think best, so that applicants may be able to come forward for examination at fixed periods, and should be required to pay a fee for the examination in advance.

On motion, the report was ordered to be entered on the Minutes; and on motion of Dr. ATLEE, the Council was permitted to withdraw the resolutions, which was done.

Dr. R. L. SIBBET, of Carlisle, presented a report of the results of the Registration Law, as shown by the reports of the Prothonotaries of the various counties.

On motion of Dr. E. J. JACKSON, the report was accepted, and the suggestions were recommended to the county societies. (See report.)

On motion, the Committee was continued, with the thanks of the Society for their efficient labors.

The following was received:—

YPSILANTI, MICH., May 11, 1882.

To President State Medical Society:—

The fraternal greetings of the State Medical Society of Michigan are hereby extended to the Keystone State, now in session at Titusville, Pa.

J. H. JEROME,
President Michigan Medical Society

On motion, Dr. VARIAN was requested to telegraph a return greeting in behalf of this Society.

The following is the reply:—

TITUSVILLE, PA., May 11, 1882

To J. H. Jerome, President Michigan State Medical Society:—

Thanks for the fraternal greetings.

The Keystone State returns her greetings, with the hope that the sessions now being held will result in benefit to the members, and progress in medical science.

By order of the Medical Society of the State of Pennsylvania.

WM. VARIAN,
Chairman of Committee of Arrangements.

On motion, the Society adjourned to meet on Friday, at 10 A. M.

FRIDAY, May 12th.

The President called the Society to order at 10 A. M. Prayer was offered by Rev. F. H. Rowley.

Dr. J. V. SHOEMAKER, of Philadelphia, offered the following resolutions, which were unanimously adopted:

Resolved, That the thanks of the Medical Society of the State of Pennsylvania are hereby tendered to the members of the Committee of Arrangements, Drs. W. VARIAN, J. C. ELLIOTT, G. O. MOODY, J. P. HASSLER, D. BEST, G. W. BARR, E. M. FARRELLY, G. L. CLARK, D. M. CALVIN and J. L. STEWART; to the ministers who opened our sessions with prayer, Revs. J. A. Maxwell, H. Purdon and F. H. Rowley; to the Hon. David Emory,—all of whom, though surrounded by the marks of a recent adversity, have succeeded in making us comfortable during our stay, and have added largely to make the sessions pleasant, harmonious, and interesting.

Resolved, That we tender our heartfelt thanks to his Honor the Mayor, James H. Caldwell and his good lady, Dr. and Mrs. WM. VARIAN, and Dr. and Mrs. GEO. O. MOODY, for the elegant and enjoyable receptions given at their homes.

Resolved, That we desire to express our deep gratitude and high appreciation to the citizens of Titusville, and particularly to the ladies, for the hospitable manner in which they have received the members and their families.

Resolved, That we extend our thanks for courtesies to the members of the Oil Exchange, the Battery Armory, the *Daily Herald* of Titusville, and the *Philadelphia Public Ledger*.

Resolved, That we tender our thanks to the President and officers, for their valuable services during the session.

Dr. SHOEMAKER introduced Dr. G. H. Fox, of New York, who was invited to a seat with the Society.

Dr. E. GRISWOLD, of Sharon, read a paper entitled "Herniotomy, with a few cases."

A paper on "Excision of Cartilage in Nasal Occlusion due to Deviated Septum" was read for Dr. J. B. ROBERTS, of Philadelphia, by Dr. LEFFMANN.

Dr. WM. VARIAN, of Titusville, read a paper entitled "A Case of Ovariotomy," showing the presence of a fibroid in the ovary, —an extremely rare form of disease.

The paper was discussed by Dr. A. HEWSON, of Philadelphia, who alluded to the treatment by dry earth. By this method, in many cases which were abandoned by operators on account of the numerous adhesions, he had succeeded in producing the degeneration of the tumor, its diminution, and a final cure. In from three to five weeks, he looks for favorable results.

On motion, the papers were referred to the Committee of Publication.

The report of the delegates to the Massachusetts Medical Society was received, and referred to the Committee of Publication.

As the members were rapidly leaving the hall on account of the cold, on motion of Dr. VARIAN, it was agreed that the remaining papers should be read by title, in order that the Society might adjourn.

The following papers were read by title: "Management of the Perineum during Labor," by Dr. FRANCES N. BAKER, Media; "Hæmaturia," by Dr. W. S. ROLAND, York; "The Use of Atropia," by Dr. EZRA DYER, Pittsburgh; "Surgical Expedients in Emergencies," by Dr. R. J. LEVIS, Philadelphia; "A Case of Lacerated Perineum," by Dr. WILLIAM M. FINDLEY, Altoona; and referred to the Committee of Publication.

The President made the following appointments for 1883:—

To prepare the "Address in Surgery," Dr. A. CRAIG, of Columbia; "in Obstetrics," Dr. G. O. MOODY, of Titusville; in "Hygiene," Dr. HENRY LEFFMANN, of Philadelphia; "in Mental Disorders," Dr. JOHN CURWEN, of Warren; "in Medicine," Dr. JAMES TYSON, of Philadelphia.

The President-elect, Dr. WM. VARIAN, was then escorted to the chair by Drs. ATLEE and POLLOCK; and after some remarks, he declared the Society adjourned, to meet at Norristown on the second Wednesday of May, 1883.

WILLIAM B. ATKINSON,
Permanent Secretary.

CENSORS.

1*st District.*

(Philadelphia, Delaware, and Chester Counties.)

A. FRICKÉ,	Philadelphia County.
ISAAC N. KERLIN,	Delaware "
JAMES FULTON,	Chester "

2*d District.*

(Bucks, Northampton, Lehigh, Carbon, Monroe, and Pike Counties.)

J. B. WALTER,	Bucks County.
TRAILL GREEN,	Northampton County.
WM. B. ERDMAN,	Lehigh County.

3d District.

(Montgomery, Berks, and Schuylkill Counties.)

HIRAM CORSON,	Montgomery County.
W. MURRAY WEIDMAN,	Berks "
D. W. BLAND,	Schuylkill "

4th District.

(Lancaster, Lebanon, Dauphin, Perry, and Snyder Counties.)

J. MONTGOMERY DEAVER,	Lancaster County.
H. O. WHITMAN,	Dauphin "
H. O. ORRIS,	Perry "
R. ROTHROCK,	Snyder "

5th District.

(Cumberland, York, Adams, Franklin, and Fulton Counties.)

S. B. KIEFFER,	Cumberland County.
J. W. C. O'NEAL,	Adams "
JOHN W. KERR,	York "
SAMUEL G. LANE,	Franklin "

6th District.

(Juniata, Mifflin, Huntingdon, Blair, Cambria, Bedford, and Somerset Counties.)

A. H. SHEAFFER,	Mifflin County.
A. B. BRUMBAUGH,	Huntingdon County.
JOHN FAY,	Blair "
J. G. WILSON,	Cambria "
D. S. GRIFFITHS,	Bedford "

7th District.

(Fayette, Westmoreland, Indiana, and Armstrong Counties.)

W. S. DUNCAN,	Fayette County.
D. W. MCCONAUGHY,	Westmoreland County.
WM. ANDERSON,	Indiana "
M. H. ALTER,	Armstrong "

8th District.

(Allegheny, Washington, and Greene Counties.)

W. S. FOSTER,	Allegheny County.
S. L. BLACHLEY,	Washington "

9th District.

(Butler, Beaver, Lawrence, Mercer, Venango, and Clarion Counties.)

Samuel Graham,	Butler County.
D. S. Marquis,	Beaver "
E. Griswold,	Mercer "
W. S. Welch,	Venango "
James Ross,	Clarion "

10th District.

(Erie, Crawford, Warren, Jefferson, Forest, Elk, McKean, Potter, and Cameron Counties.)

A. S. Bonsteel,	Erie County.
O. S. Wright,	McKean County.
David Best,	Crawford "
R. B. Brown,	Jefferson "
H. L. Bartholomew,	Warren "
E. O. Bardwell,	Cameron "

11th District.

(Clearfield, Centre, Clinton, Tioga, Lycoming, Northumberland and Union Counties.)

A. Hibler,	Centre County.
C. K. Thompson,	Tioga "
B. H. Detweiler,	Lycoming "
W. J. Smathers,	Clearfield "

12th District.

(Montour, Columbia, Luzerne, and Sullivan Counties.)

James D. Strawbridge,	Montour County.
E. R. Mayer,	Luzerne "

13th District.

(Bradford, Wyoming, Susquehanna, and Wayne Counties.)

D. N. Newton,	Bradford County.
L. A. Smith,	Susquehanna County.

ADDRESS

OF

J. L. ZIEGLER, A. M., M. D., PRESIDENT.

Ladies and Gentlemen, and Members of the Medical Society of the State of Pennsylvania :—

The present may be designated as the age of restless thought —thought that is never satisfied—that eagerly seizes every new idea—acknowledges no superior—places all mankind on the same plane of equality—makes no distinction of sex in life's work—is impatient of restraint—repudiates the use of force in the government of the affairs of men—denies everything beyond the grasp, and yields no allegiance to a higher authority than human reason—allows no influence in solving the problem of emancipating the mind from the slavery of ignorance and superstition, except the vague deductions of a false logic, and is unwilling to believe that to the revealed will of God, man owes whatever of goodness and happiness this world affords. The same arch enemy that beguiled our common mother is to-day whispering in the ears of her children, endeavoring to persuade them that "ye shall not surely die."

While modern scepticism unfurls its banner defiantly, many of its votaries, numbered among the learned, distinguished, and praiseworthy in the eyes of the world, are content with an insidious promulgation of their principles; hence, error in protean forms is most frequently presented in the garb of truth, with loud shouts for freedom of thought, freedom of speech, and freedom of the press, denouncing every one as an obstacle

to progress and reform who does not believe in liberalism, advanced thought, evolution, communism, rationalism, equality of the sexes, and, consequently, woman's rights.

It would be a difficult task to consider all the subtile methods adopted by the enemies of truth to inject their poison into the minds of the credulous; with a seeming love for mankind they never tire until their deluded followers lose faith, and are landed on the bleak shores of infidelity.

Life's pathway is everywhere strewn with the fragments of once bright hopes and fair prospects. The danger is not seen, the Christian's beacon is not heeded, until too late to save the bark from being wrecked upon the lee-shore of fallacy.

The most pernicious fallacies of the present age are those which arise from logical conclusions based upon incorrect premises. The danger of these becomes the greater in proportion to their approximation to the truth. The doctrine of the equality of the sexes is one of these incorrect premises from which logical conclusions are deduced, many of whose advocates are tainted with "an impertinent rationalism, chilled by an icy unbelief" imbued "with the spirit of a devastating criticism that criticises the Bible out of its covers and the title-page of the volume"—degrading the holy bonds of matrimony into a mere civil contract to be dissolved by the caprice of either party—striking at the root of those divinely ordained principles upon which is built the superstructure of society. They assume as an axiom that the sexes are equal, and if this is admitted the logical conclusion will be irrefutable. Many persons never inquire into the truth of the proposition, especially if it is agreeable to their way of thinking, but will receive the affirmation as a demonstrated fact. The pretensions of a class of political and social reformers based upon the idea of the equality of the sexes has given rise to many other delusions, advocated by men educated and prominent in science and literature, no regard being had for the ultimate effect upon the destiny of mankind. Many of our so-called scientists seize with avidity every idea that has a tendency to glorify man and dethrone the Deity. The pride of human wisdom scorns superiority; while seeking and acknowledging a cause for every phenomenon of nature it will deny the existence of a Great First Cause, and treat revelation as a cunningly devised fable, especially when conflicting with some utopian scheme of reformation. It may be safely

asserted that any doctrine or scheme of reform, no matter how plausible, which conflicts with the plain teachings of the revealed will of God, is ruinous to the present happiness and ultimate destiny of mankind.

The wrong interpretation and application of words may occasion much discussion and misapprehension—as, for example, in the application of the term "equality" in the comparison of the sexes,—unless a common standard of measurement can be adopted, based upon a correct etymology of the word. Is such a standard possible? To be equal is to be alike, in magnitude, quality—strength—talents—mental power—beauty—not superior or inferior—having the same rank, station, or office. It needs no argument to prove that such a standard of perfect equality is impossible, inasmuch as the disparity of the sexes, viewed in the aggregate, is well marked. The difficulty becomes still greater when considered in the abstract.

Notwithstanding the declaration of the fathers of our government "that all men are created equal," such is not the fact in the strict application of the term. Men are not equal physically or mentally. They differ in strength and size; their proclivities and tendency toward various avocations in life become apparent almost from birth. Hence "*Poeta nascitur, non fit*" is applicable to other attributes beside the poetic.

True, much may be accomplished by proper education and training in developing the faculties. Yet it is evident that the Creator has bestowed special endowments that are susceptible of greater expansion and adaptation for a specific avocation in one person, while in another the gift may be as ample, but for a different calling.

The fact that men undoubtedly possess similar attributes in common does not prove that these are alike in degree. The same diversity unquestionably exists in the opposite sex. Hence the impossibility to determine a standard by which the faculties possessed by both in general can be compared in the abstract.

When each sex is viewed in the aggregate—physically, mentally, and in the light of divine truth—the difficulty is no longer insurmountable. Physically, the average size of man is always greater than woman; the average difference in height is about twelve centimeters (four and two-thirds inches). While woman often appears larger than man, on account of a greater tendency in her to deposit adipose tissue, yet her average weight is less.

In man, the muscular system is more fully developed and stronger, the bones are larger, their tissue more compact, the skull is larger, lower, and longer than that of the woman; the pelvic bones are narrower, while the width across the shoulders is greater. His pulmonary capacity is greater; although he does not breathe as often, he absorbs more oxygen; the temperature is higher; his pulse is less frequent, but the pressure of blood is stronger. The brain is heavier; the average, according to Quain, is forty-nine and one-half ounces for man, and forty-four ounces for woman. This difference does not depend upon her relatively smaller size. Her nervous system is marked by peculiar properties, by a smaller and greater delicacy of structure and sensibility; being susceptible to stronger impressions, and greater liability to excessive stimulation from external agents and moral influences. In her, the skin is more delicate, whiter, less hirsute, but more abundantly supplied with capillary vessels. A prominent and well-marked difference is found in the anatomy of the vocal organs; the diameter of the trachea is less; the larynx, glottis, and cavities communicating with the nose, are smaller. The muscular and ligamentous structure of these parts being more pliant, gives rise to a distinctive character of the voice, affording a greater variety of tone, softer, more acute, and invariably pitched an octave above that of the man. This cannot be attributed to the effects of habit, occupation, or education.

Were it deemed necessary, comparative evidence could be drawn from the higher animals in the wild state, showing as substantial diversity, aside from sexual organization, as we find in man; but enough has been presented to show that, physically, there is no equality; and the assumption that the inequality in man arises from habit, occupation, and education, is mere theory, false in conception, and unscientific in application.

Because man is able to lift a greater weight does not make him superior to woman, nor can she lay any claims to superiority because her voice is pitched an octave higher than his; because he is taller, heavier, and capable of exerting greater physical force, does not indicate his superiority.

If exercise and education will enable her to exert the same physical strength and mental endurance, is it fair, or just, that she should be placed in the same arena of life?—to fight the battle with her opponents of either sex, mingle in the turmoil and strife of politics, and engage in the hard work of prepara-

tion for contest in the race for professional honors, thus imposing upon her an additional burden to her already hard lot?

If she is intended to share in these occupations, why not give her an opportunity to develop her muscular system, so as to be able to participate in the advantages and emoluments of the great industries of the world?

Let her have the privilege of delving in the earth and bringing forth its hidden treasures, of plowing the ocean with the great ships of commerce, of hewing down the forest and compelling the virgin soil to yield its sustenance, of girdling the globe with the iron track and guiding the swift-flying train. Deny her not the right to cut out the granite block from its primitive bed, and fashion it into shape to take its place in the palatial structure; or of compelling the crude ore to yield its pliant metal to be fashioned by her hand into the mighty engine and complex machinery. Let her, too, share in the glory of war on the field of battle in defense of home and fireside.

No! Such is not her errand, nature, or mission, and those who would place her on such equality, compel her to devote her whole energies to science, politics, and the prolonged preparation which is necessary to carry on any of the great projects of industry or trade, thus doing violence to her vital powers and physical organization, which would be inconsistent with "the function of maternity, and all that it implies." She is liable to all the ills and morbific influences not dependent upon sexual distinction to which man is subject; to these are added diseases and adverse influences which arise from functions pre-eminently her own. Her organization and temperament being designed for a specific end give to her constitution an important and distinctive character, and a claim to immunity from all avocations which would counteract the ultimate object of her creation.

In view of the palpable disparity of the sexes physically, and the evident diversity of function, and adaptation to distinctive duties, it is scarcely to be expected that equality will be found in that higher attribute, the intellect, which places man so prominently above the rest of the animal creation, and which gives him so vast a field and such varied power, in order that his allotted mission may be accomplished.

It must be admitted that the difficulty of comparing the intellectual faculties is great, by reason of our inability to apprehend or measure definite quantity, magnitude or degree. The

evidence, unlike that which applies to the physical, cannot be determined positively, but proximately, and can only be obtained from an impartial observation of mental phenomena.

The researches of the anatomist and physiologist, although demonstrating a difference in the relative size of the organ of the intellect, are of little value, so long as the seat of each attribute cannot be definitely determined. Many attempts have been made to locate the faculties. So far, little has been accomplished with absolute certainty, except that there must be brain substance through which intelligence is made manifest, and that the process involves a destruction, or "transmutation of a certain amount of nerve tissue, requiring restoration by nutrition as in other tissues of the body."

The fact that the intellectual faculties have their seat in the cerebrum, and that its size bears a relative proportion to strength of intellect, affords very little argument bearing upon a comparison of the sexes, notwithstanding the manifestations of intelligence vary as much in degree as the functions of the physical organs. We know absolutely nothing concerning the element which constitutes the mind, except its existence as demonstrated by its phenomena, and that the brain is the organ through which its functions become apparent, and that these are susceptible of education, and are liable to be affected by injury or disease of the encephalon.

Our knowledge, therefore, of the relative mental capacity of the sexes can only be derived from a comparison of the manifestations of mind as they are and have been unfolded.

It is unnecessary to cite the opinions and testimony of philosophers, moralists and educators, to establish the fact that, as a rule, woman does not hold at the present time, nor has she in the past attained, the same eminence as man in the higher departments of mental culture.

The partisans of equality assert that this is due to man having oppressed and enslaved woman, by reason of his greater muscular power. If this is true, if physical force is the only element of oppression, why was it that the less muscular but more intelligent Caucasian was able to hold the sturdy and certainly more powerful Ethiopian so long in the chains of slavery? "But it would be a hopeless task to endeavor to convince some persons that certain relations do exist, simply because they allege that certain relations ought to exist."

This disparity does not prove that man's influence has been, or is to-day, greater in the world's history than woman's; on the contrary, it would not be difficult to show that woman exercises a greater power in moulding the destiny of mankind than man. While his voice is heard in the angry forum, commanding the ear of listening senates, reasoning with the scoffing crowds on Mar's Hill, or directing the fury and rushing tide of battle, hers, lutelike, in tones of sweetest music soothes the rising storm of passion, and bids the angry waves be still! Love is the source and power of her influence; her warm affections and sympathies give a color to her whole life. It is her kindness, gentleness, and patience that qualify her pre-eminently for the tender care required by her offspring; it is these that give her the power over the plastic mind of childhood, to mould and guide it into the paths of wisdom and virtue. Though silent and unobtrusive, yet all powerful, it is these that place her high above and give her a greater influence over the controlling agencies of the world's destiny than man; just as the gentle rain, the shimmering dewdrops, the mellow light and genial warmth of the vernal sun, revivifying the herbage, clothing the fields in living green, and painting the forest in a thousand shades and hues of beauty, are more potent, more blessed, and more beautiful, than the raging torrent, the whirlwind's blast, or the earthquake's crash. Man, the representative of the coarser, the force element of the threatening law; woman the subjective, the loving-kindness, charity, and mercy of the gospel of peace.

The unerring light of Divine truth places the sexes in distinct relation to each other. The man was first made; the woman was made after him and out of him,—the last and crowning glory of the creation. In the declaration of the man that "this is now bone of my bones and flesh of my flesh," is signified the unity and blending of two distinct beings as exemplified in the ordinance of marriage. The man receives the woman from the hands of the Creator as a help, a companion, congenial and meet for him; differing from him in sex only, not in nature; made of him and out of him as his equal; innocent and pure; joint participant of the favor and allied in communion with God.

The tempter came; the relation to their Creator and to each other is changed from a state of innocence and purity to guilt and shame. The man's employments and enjoyments are embit-

tered to him, his habitation is cursed, he is doomed to a life of toil, to eat his bread in the sweat of his face till he returns to the ground. The woman is condemned to a state of sorrow and subjection,—sorrow in her sexhood, and subjection in the sentence that "thy desires shall be to thy husband, and he shall rule over thee."*

Through the long ages of the world's history, neither party has been able to escape the penalty of their transgression. His has been a life of toil and trouble, care and conflict, weariness and woe; hers of sorrow and subjection, pain and anguish, oppression and affliction. Notwithstanding the merciful promise to the woman that her seed shall bruise the serpent's head, that a balm should be found in Gilead, an ointment that should mollify, that should mitigate and make the penalty endurable,—this (the gospel) does not exempt them from the trials and troubles of this life, nor does it change their relative position towards each other, but in stronger language, more clearly defined and tenderly enjoined, reiterated by two of the inspired Apostles, exhorting them to the discharge of mutual and relative duties: "Submitting yourselves one to another in the fear of God;" "Wives, submit yourselves unto your own husbands as unto the Lord;" "For the husband is the head of the wife, even as Christ is the head of the Church;" "Therefore, as the Church is subject unto Christ, so let the wives be to their own husbands in everything;" "Husbands, love your wives, even as Christ also loved the Church and gave himself for it;"† "Likewise, ye wives, be in subjection to your own husbands, for after this manner, in the old time, the holy women also who trusted in God adorned themselves, being in subjection unto their own husbands, even as Sara obeyed Abraham;" "Likewise, ye husbands, dwell with them according to knowledge, give honor unto the wife as unto the weaker vessel."‡

It is to be expected that this, in the estimation of the worldling, the rationalist, and the modern reformer, is all obsolete, time-worn, and not intended for this nineteenth century of light and science, unworthy of the notice of the critic, and incompatible with liberalism and advanced thought.

It is certain, however, that it does not agree with the modern ideas of equality of the sexes, and with those who would place them on the same plane in life's work.

* Genesis iii. 16. † Ephesians v. 21-25. ‡ 2 Peter iii. 1, 5, 6, 7.

If it was intended that woman should occupy the same sphere of duty with man, and as it is admitted that she is more moral, more devout, and more inclined to be religious (as is proven by the fact that the female membership of our churches far exceeds that of the male), does it not appear somewhat strange that she was not chosen and commissioned to go and preach the gospel by the Master, when he ordained his ministers in the church? Nor was she afterwards recognized by the inspired Apostles as having a part in the ministry of the word, but was absolutely forbidden to exercise the functions of the office: "But I suffer not a woman to teach nor usurp authority over man, but to be in silence." *

From this it is evident that man and woman are intended to occupy different spheres in life, and that they are physically, mentally, and morally adapted for a specific end, not antagonistic, but concurrent, not oppressive and brutal, as master and slave (as some of the most brilliant advocates of woman's rights would have us believe is her enforced lot), but in love, harmony, and Christian sympathy, each in the performance of their appropriate duties.

John Stuart Mill, in his work on the "Subjection of Woman," in discussing the present inequality of the sexes says "that it never was the result of deliberation or forethought, or any social ideas, or any notion whatever of what conduced to the benefit of humanity or good order of society. It arose simply from the fact that, from the very earliest twilight of human society, every woman (owing to the value attached to her by men, combined with her inferiority in muscular strength) was found in a state of bondage to some man." Again, in further illustration of the bondage of woman in the marriage relation, he says: "But this dependence, as it exists at present, is not an original institution, taking a fresh start from considerations of justice and social expediency; it is the primitive state of slavery, lasting on through successive mitigations and modifications, occasioned by the same causes which have softened the general manners, and brought all human relations more under control of justice and in the influence of humanity. It has not lost the taint of its brutal origin." In a subsequent chapter, he says that "marriage is the only actual bondage known to our law; there remains no legal slave except the

* 1 Timothy ii. 12.

mistress of every house." Such doctrine can have no other result than to diminish reverence for the marriage relation, and make the bond unstable, beget an impatience under its restraints, break up the family, with all the resultant evils. It is such doctrine that is developing a spirit of independence and unwillingness to assume the cares and responsibilities of married life, and that is crowding our courts of justice with divorce suits, especially in the New England States, where the number has so alarmingly increased that it has reached the ratio of one divorce to every twelve marriages, and in one State (Connecticut) one to every eight,—"a proportion even greater than that in France during the general break-up of law, religion, and society attending the French Revolution."

Dr. Goodell (to whom I am indebted for these facts), in his address on the "Dangers and Duties of the hour," pertinently asks: "Why are there so many ill-assorted marriages? Why these unhappy homes and broken households? What mean these separations between husband and wife?" Let me add to his answer ("that they mean the violation of one of nature's immutable laws"), that they are the inevitable fruits of a disregard of the plain teachings of God in his revealed will. They are the natural outgrowth of the puling infidelity of a Mill, an Ingersoll, and the silly sophistry of the advocates of woman's rights. It is the same spirit disguised under the cloak of a false philanthropy and charity, an erroneous idea of equality and liberty, producing a disregard of authority, and obedience to the supremacy of the law, based upon the will of the majority as exemplified by the pernicious doctrine of independent states' rights, which culminated in our late fearful and bloody rebellion. It dates back to the garden of Eden, to our first parents who were beguiled by the serpent's false promise that they would be as gods, that they would be equal with God.

But we are told that the inevitable has come, that woman preaches, practices medicine, pleads at the bar, and votes; this is all true, but the fact does not prove that it is right, consistent with her mission, or for the best interests of humanity. The mere fact that a system or doctrine is established or practiced even under the sanction of law, does not prove its propriety or justice. Negro slavery was once very firmly established and widely extended, yet that did not prove it justifiable. Mormonism with its attendant polygamy is to day established and prac-

ticed, yet that does not make it the less an abomination. We have chartered medical schools that send forth their legally constituted M. Ds. by the hundred, who practice upon the principle of *similia similibus curantur;* yet this does not substantiate the dogma, or prove that a part is greater than the whole, or that the more you dilute a drug the greater its potency, nor does it make it the less a delusion, notwithstanding the medical society of the State of New York has "crooked the pregnant hinges or the knee, where thrift may follow fawning."

The fact that woman occupies the various positions heretofore allotted to man alone, or that she is capable of attaining the same eminence in science, politics, and the arts, does not sanction its propriety. Let it be understood that the question does not alone involve the possibility of educating woman to the same extent as man, but whether so doing is compatible with those momentous endowments which pertain to her sphere in life, which may be inferred from her physical organization.

Hence it becomes all-important that she should receive a general, thorough, and Christian education, not specific or secular, and at the price of an enfeebled body and shattered nervous system, as is too frequently the case under the present process, which in a great degree loses sight of the fact that education, in its true sense, means more than the mere acquisition of knowledge by cramming the mind with the current literature, science, and philosophy, as an investment the returns of which are to be estimated in dollars and cents; but let her be educated to meet all the requirements in her sphere of life, to the end that she may exercise her influence and power for the welfare and happiness of posterity. This power is not derived from her occupying the pulpit, the professor's chair, the physician's office, the bar, or the seat in the councils of the State or nation, but from her influence as the mother, the divinely appointed instructor and guide of her children. Here she is seen in her most sacred and exalted character; language cannot describe its importance over childhood for time and eternity, over individual character, over the family, and through this over the nation. The holiest ministers, the most profound scholars and eminent statesmen, unite in attributing their success and usefulness to the tender care, the pious instructions, and the fervent and importunate prayers of the Christian mother. She is the one bright luminary that lights the early dawn of childhood. She

guides the heedless steps and trains the faltering tongue. Her presentations and exemplifications of divine truth are such that it produces the happiest effect upon character and life. Her enthronement in the domestic circle is complete. She rules with tenderness, patience, and never-dying love. The remembrance of mother and of home never fades from the soul. Remove her from its sphere, and the home tether will be broken. Let her go out into the world and mingle in its strife, and the hallowed influence of home will be lost, with all its far-reaching results.

How beautiful the picture of the Christian home—and no less true than beautiful—when the parents and dear ones are gathered around the family altar, uniting in their daily homage, asking God's blessing upon the household, so inimitably portrayed by Scotland's immortal bard:—

"The cheerfu' supper done, wi' serious face,
They round the ingle form a circle wide;
The sire turns o'er wi' patriarchal grace,
The big *Ha'-Bible* ance his father's pride:
His bonnet rev'rently is laid aside,
His lyart haffets wearin' thin an' bare;
Those strains that once did sweet in Zion glide,
He wales a portion with judicious care;
And '*let us worship God!*' he says with solemn air.

"They chant their artless notes in simple guise;"
They tune their hearts, by far the noblest aim:
Perhaps *Dundee's* wild warbling measures rise,
Or plaintive *Martyrs* worthy of the name;
Or noble *Elgin* beats the heav'nward flame,
The sweetest far of *Scotia's* holy lays:
Compar'd with these Italian trills are tame;
The tickled ears no heartfelt raptures raise,
Nae unison hae they with our Creator's praise.

* * * * * *

"Then kneeling down to Heaven's Eternal King,
The saint, the father, and the husband prays:
Hope "springs exulting on triumphant wing,"
That thus they all shall meet in future days,
There ever bask in uncreated rays,
No more to sigh or shed the bitter tear,
Together hymning their Creator's praise.
In such society yet still more dear,
While circling time moves round in an eternal sphere.

* * * * * *

Then homeward all take off their sev'ral way;
The youngling cottagers retire to rest;
The parent-pair their secret homage pay,
And proffer up to Heaven the warm request
That He who stills the raven's clam'rous nest
Or decks the lily fair in flow'ry pride,
Would in the way his wisdom sees the best,
For them and for their little ones provide,
But chiefly in their hearts with grace divine preside.

From scenes like these old Scotia's grandeur springs,
That makes her lov'd at home rever'd abroad;

* * * * * *

From scenes like these "springs the grandeur" of our own loved land. In the midst of "scenes like these," in the vales and hills of old Scotia, were born and nurtured the principles of civil and religious freedom that form the basis of our own government.

"Scenes like these" were transplanted and fostered by our forefathers until they grew into this, the asylum for the oppressed; would that we might still behold them in every household, that they might be the rule, and not the exception; for it is to be feared that, "'tis a custom more honored in the breach than the observance." That in this age of novelty and steam; of rapid transit and electric speed; of the discovery of new facts, the development of new theories and startling propositions,—we have abandoned the righteous custom of the fathers, and forgotten the wisdom of the past.

In the struggle for wealth and position; in the giddy rounds of pleasure-seeking and fashionable folly, the hallowed memories of home are lost, its sacred associations and attractions are obliterated. And in its stead we have the teachings of a skeptical philosophy, the pernicious platitudes of a pseudo-reform under the specious plea of a false philanthropy, a false doctrine of equality,—an equality that is inconsistent with the physical, mental, and moral sphere of the sexes, and that will sap the foundations of society by destroying the family, the home, the origin, the primitive form of government instituted by the Creator.

For the perpetuity of free government depends upon the virtue of the people, and there can be no virtue without a proper appreciation of the sacredness of the marriage institution, based upon the divinely ordained relation of the sexes and

the sanctity of the true home. For if the Christian home is broken up and its influence destroyed, our churches may as well be closed, and it will be of little consequence who occupies the Presidential chair, or the seats in the councils of the State or Nation. Destroy our Christian homes, and you will tear down the bulwarks of our beautiful temple of civil and religious freedom. No! sex is a unity in duality, a blending of a diversity of character in harmony and love, each in its own appropriate sphere laboring to promote each other's welfare in the mutual enjoyment of the rich provisions of a bountiful Providence, in order that man may attain the chief end, which is to glorify God and enjoy Him forever.

TREASURER'S REPORT.

The undersigned, Treasurer of the Medical Society of the State of Pennsylvania, begs leave to submit the following annual report:—

The balance on hand May 12, 1881, was one thousand four hundred and five dollars and seven cents ($1,405.07). There was received during the year from all sources two thousand five hundred and forty-two dollars and forty-four cents ($2,542.44). During the same time the expenditures amounted to one thousand nine hundred and eighty-one dollars and eighty-three cents ($1,981.83), leaving a balance on hand of one thousand nine hundred and sixty-five dollars and sixty-eight cents ($1,965.68). The annexed statement of receipts and expenditures will show in detail the sources from which the receipts were obtained, and the objects to which the expenditures have been applied.

All of which is respectfully submitted.

BENJAMIN LEE,
Treasurer Medical Society, State of Pennsylvania.

The following named County Medical Societies are in arrears:—

Bedford County Medical Society, dues of 1880,	$15 00
Lehigh County Medical Society, dues of 1880,	11 00
Butler County Medical Society, dues of 1881,	18 00
Lycoming County Medical Society, dues of 1881 (bal.),	18 50
Tioga County Medical Society, dues of 1881 (bal.),	52 80
Total delinquency,	$115 30

The following-named County Medical Societies have forfeited their connection with this Society by reason of non-payment of assessments for the required period:—

Clinton County Medical Society.
Juniata County Medical Society.
Lawrence County Medical Society.

TITUSVILLE, May 11, 1882.

Statement of Receipts and Expenditures.

RECEIPTS.

From balance on hand May 12, 1881,			$1,405 07
" 1 County Medical Society for dues of 1879,	$20 00		
" 7 County Medical Societies for dues of 1880,	178 49		
" 44 County Medical Societies for dues of 1881,	2,339 50		
" sale of Transactions,	1 65		
" interest on deposit in Fidelity Trust and Safe Deposit Company,	2 80		
		2,542 44	
			$3,947 51

EXPENDITURES.

For expenses of Committee on Medical Legislation, Dr. R. L. Sibbet, Chairman,	$15 00		
" expenses of Treasurer in attending meeting at Lancaster,	9 08		
" salary of Dr. Wm. B. Atkinson, Permanent Secretary,	300 00		
" expenses of Committee of Arrangements for meeting at Lancaster, Dr. Henry Carpenter, Chairman,	69 88		
" general expenses of Secretary,	27 64		
" bill of T. K. Collins, printing and distributing Transactions of 1881,		$1,549 12	
" printing and forwarding memorials to Legislature for Committee on Medical Legislation,		10 45	
" stationery, postage, etc.,		64 30	
" printing 150 Dr. Turnbull's paper on Diseases of the Eye in Engineers,		4 00	
" printing 300 copies Report on Medical Legislation,		10 00	
		$1,637 87	
Less discount,		78 89	
		1,558 98	
For office expenses of Treasurer.		1 25	
Balance due the Society May 11, 1882,		1,965 68	
			3,947 51

This certifies that we have carefully examined the above report of Dr. Benjamin Lee, Treasurer of the Medical Society of the State of Pennsylvania, and find it correct.

THOMAS J. GALLAHER,
ISAAC PURSELL,
Auditing Committee.

ADDRESS IN OBSTETRICS.

BY R. STANSBURY SUTTON, A.M., M.D.,

PITTSBURGH, PA.

GENTLEMEN:—At your last meeting, held in the city of Lancaster, your honored president, Dr. John T. Carpenter, appointed me, a member of the Allegheny County Medical Society, to deliver before you at this meeting the Address in Gynæcology. When I accepted the honor thus conferred upon my county society, I did not expect to spend the time allotted to this task in study in a foreign land. But such has been the fact. Therefore I present to you, through my friend and colleague Dr. William H. Daly, this address, and ask for it your kind indulgence. The subject which I have chosen is "Abdominal and Pelvic Surgery on the Continent of Europe."

It is not intended that this address should be exhaustive of so fruitful a subject, but that it should embrace some interesting points which it has been my privilege to observe personally. The subject interests the American profession, because, standing prominently before the world in its inception was our immortal countryman, Ephraim McDowell, of Kentucky, who, in the year 1809, did the first ovariotomy. And during the early growth of this branch of surgery, we find clinging to it a galaxy of American names, the most brilliant of which is that of the late Dr. Washington L. Atlee, of Philadelphia. It will ever remain a part of medical and surgical history, that American surgeons first demonstrated the practicability of performing ponderous surgical operations within the cavity of the peritoneum. And it will remain an indelible fact that they introduced to the world an operation which has added centuries to human life, and served as a stepping-stone to other great surgical achievements; notably, the removal of tumors of the uterus, either with or without a portion of the uterus itself. What I claim for America is hers. To the honor of her immortal dead, and the profession who mourn their loss, this historical fact

will remain. But four years after Dr. McDowell successfully performed ovariotomy, Professor Martin Langenbeck, the uncle of the present Professor Langenbeck, successfully removed the entire uterus through the vagina in a case of carcinoma of its cervix. His patient survived the operation, and lived in good health, for thirty years afterwards. It is by no means certain that Professor Langenbeck knew at that time that Dr. McDowell had executed an operation within the cavity of the peritoneum. We must in justice to this illustrious surgeon and the profession in Germany accede to him a surgical achievement not less notable than that of Dr. McDowell. It was, like ovariotomy, an intraperitoneal operation of great magnitude. Thus in less than one-half of a single decade, from 1809 to 1813, the cavity of the peritoneum was invaded for surgical operations through the abdominal wall by an American surgeon, and through the vaginal wall by a German surgeon, whose name still lives in his illustrious nephew, the present Professor Langenbeck. But abdominal surgery is no longer limited in its resources to the achievement of Dr. McDowell or Professor Martin Langenbeck. In the last decade its strides have been wonderful. No longer does the surgeon stitch the wounded intestine to the cut in the abdominal wall, that an artificial anus may be established. But thanks to Professors Lambert, Czerny, and Billroth a wounded intestine is safely sewed together and left free in the cavity of the abdomen. A diseased loop of the intestine is successfully cut away, and a complete resection of the pyloric extremity of the stomach is accomplished. The men yet living, who are illustrious in this department of surgery, might well find fault with us if we forget the name of one who has made, in a great measure, their efforts successful. I refer to the great Scotchman, Professor Joseph Lister.

Without respect to the great fundamental principle of Listerism, intraperitoneal surgery must again lose the proud position it has gained through it. It was for American genius to conceive the first great lesson, and for German genius to conceive a second equally great, but it was for the genius of a Scotchman to make the application of these lessons most secure. That I may the more easily for myself show you to what extent abdominal and pelvic surgery has attained, I respectfully invite your attention to the exploits of a number of opera-

tors whose labors I have observed recently, and I shall group them in the order in which I have visited them.

Professor Billroth, of Vienna, was the first. During my visit I saw him open the abdomen seventeen (17) times. In these operations he resected the stomach, intestines; removed simple and compound ovarian cysts, malignant tumors of the ovary, fibro and fibrocystic tumors of the uterus, sometimes taking all the fundus of the uterus away with the tumor. In one case he removed a large malignant tumor of the ovary, a piece of the fundus of the bladder, which had previously adhered to the tumor, and also several inches of the small intestine, which had also been adherent to the tumor. He closed the opening in the bladder with carbolized sutures, and united the divided ends of the intestine with carbolized sutures. This patient, after an ovariotomy, a cystotomy, and an enterotomy, was sufficiently recovered at the end of three weeks to leave the hospital. His manner of procedure may interest you. He insists that his patient be in her best possible condition. He selects a morning hour for operating in, usually nine o'clock. The operating room is heated to a temperature of 75° Fahrenheit, and the atmosphere is rendered pure by means of carbolized spray from two Lister lamps, which play for at least one hour before the patient is put upon the table. On the wall hangs a small slate, upon which is written the number of sponges prepared for the operation. On a broad table behind the position of the operator stand a number of trays, containing carbol water, in which is immersed all the instruments, ligatures, sponges, and a portion of the subsequent dressing. In an adjoining room Professor Billroth and his assistants prepare for the operation. Each with a nail-brush, soap and carbolized water scrub their hands and arms and carefully clean their nails. This done they enter the operating room. The nurse, who has also passed through the cleansing process, now escorts the patient to the operating table, upon which she is placed. The table, an ordinary operating one, is so adjusted with a lever as to lower or elevate the pelvis of the patient at will. The patient is dressed in a chemise, wrapper, and woolen leggings; the latter cover her feet and reach to the groin. She is narcotized with a mixture of chloroform one hundred parts, and of alcohol and ether each thirty parts. At her feet is a large window affording good light. Professor Billroth stands at the right of the

patient, and, as he opens the abdomen, cuts from above downwards. On his right, between him and the table, on which are the trays, stands an assistant, whose duty it is to hand to him, and to again receive from him, the instruments used during the operation. On his left stands his first assistant, carefully watching the progress of the operation, the pulse of the patient, and that the wants of the operator are supplied. His general supervision relieves the operator of all care beyond the performance of the operation. Opposite Professor Billroth is his second assistant. He applies artery forceps, and in brief, assists in all details of the operation. Another assistant gives the anæsthetic. Just out of everybody's way stands a man with Paquelin's cautery ready for use. While the patient is coming under the influence of the anæsthetic her clothing is drawn up well under her chest and arms, and her abdomen is entirely exposed. The nurse now approaches with a basin of clean, warm soap-suds and a nail-brush. One assistant scrubs the surface of the abdomen, a second shaves it with a razor, and washes it off well with a five per cent. solution of carbolic acid water. The nurse again approaches with a piece of Macintosh cloth, in which is a central elliptical aperture. The cloth has been moistened on both sides with carbol water, and is now placed over the abdomen of the patient. The opening in the cloth leaves bare an elliptical area of abdominal surface between the umbilicus and pubis and a little wider than the recti muscles. This protruding area of abdominal surface is now surrounded with wet carbolized compresses; they are tucked in between the skin and the Macintosh, and are spread out over the latter. The area of the abdomen, in which the cut will be made, now lies in the centre of a larger area of carbolized compresses, and is, beyond any possibility of a doubt, clean, antiseptic, and isolated. All this preparation is made rapidly, and is usually completed by the time the patient is narcotized. An assistant has already passed a catheter and emptied the bladder. Professor Billroth, with a long laparotomy bistoury, the gift of Spencer Wells, cuts rapidly, without the aid of a grooved director, through the wall of the abdomen. His first incision is always ten or twelve centimeters in length, and is always in the linea alba when the ovary or uterus is the objective point. At its completion a few artery clamps are seen hanging to its margins. If a cyst be now exposed, a hasty examination determines its character and

attachments. The trocar is thrust into it, and as it collapses it is drawn out and its pedicle is seized with clamps, one or two centimeters apart; below the lower clamp a double carbolized ligature is passed through the pedicle and tied both ways and cut short, the ligature lying in the groove left by the clamp, it having been lifted by the assistant as the ligature was tied down. A sponge is now placed beneath the pedicle, which is divided close below the remaining clamp with Paquelin's cautery. I have here depicted a simple ovariotomy, usually completed by him to this point in from five to seven minutes. In these simple cases the *toilette de peritoneum* is but slightly attended to. If the cyst be a multilocular one with numerous adhesions, the trocar is introduced from one cyst to another until the growth is sufficiently reduced in size: a clamp is now placed upon the pedicle, and the delivery of the cyst begins. The adhesions are clamped, grooved and ligated with carbolized silk, and are then burnt off with the Paquelin cautery. The pedicle is treated as already described and dropped into the abdomen. All bleeding points are now carefully sought for and secured, any raw points are touched with the cautery. A careful *toilette de peritoneum* is now made, and we reach the point at which we left off. On one occasion he laid aside the trocar, extended the incision, and turned out the cyst unpunctured This cyst was of medium size, very vascular, and contained a dirty fluid. Once he opened the abdomen, looked at the growth, and, turning away, bade his assistants close the incision. There was extensive malignant disease in the surrounding tissues. If the growth be a fibro-cystic or fibroid tumor of the uterus, having a pedicle, the latter is tied and divided with the cautery. But if no pedicle exist and the fundus uteri must be removed, he proceeds as follows: The broad ligaments are seized with clamps, ligated with carbolized ligatures and divided with the cautery. The body of the uterus below the tumor is now seized with strong clamps a short distance apart. In the groove made by the lower clamp are tied the ligatures, which include the several sections of uterine tissue, making together the entire width of the uterus. This constitutes the ligating of the uterus as a pedicle. If the thickness of uterine tissue is not too great, it is now severed just below the remaining clamp with the cautery. Otherwise it is cut away with the knife, and the stump now left is completely closed with sutures and covered

with peritoneum. The *toilette de peritoneum* is now completed, and the stumps of adhesions and the stump of the uterus is mopped with iodoform gauze. In anæmic subjects, if the growth be large, he compresses the growth with an elastic bandage, and secures the neck of the uterus before removing the growth. On one occasion when the tumor was malignant and attached to the bladder and small intestine, he separated and removed the tumor, and then he removed a section of the bladder and several inches of the intestine. This patient rapidly recovered from the operation. Such is his manner of dealing with intraperitoneal tumors. Having completed the *toilette de peritoneum* and mopped the ends of adhesions and pedicle or stump with iodoform gauze, he closes the external wound in the following manner. But before beginning he inquires if all the sponges are out. Once one was missing from the count, and he found it in the patient's abdomen. He now places a large flat sponge over the intestines beneath the incision. From four to six long silver wire sutures are now passed. They are armed at the distal end of each with a flat lead button ecured by a bullet, which is crushed on the end of the suture. These sutures are passed one inch posterior to the edge of the incision, and include the entire thickness of the abdominal wall. They emerge at the same distance from the edge of the wound on the opposite side. All having been passed and the sponge removed, the cut surfaces are brought together, and each suture is secured by another lead button pushed down to the skin and held by another bullet, which is crushed against it. These constitute the deep line of sutures. A superficial line of carbolized silk sutures set close together, but not including the peritoneum, complete the closure of the wound. The abdomen is now sponged clean, the wound covered with iodoform gauze and a Lister's bandage. All is secured by a roller and safety pins. Professor Billroth usually does an ovariotomy in thirty minutes; but I have seen him deliver a cyst in three minutes, and I have seen him spend fifty-five minutes in a bad case. As an operator he has no superior in Europe. His record of recoveries is not equal to that of Wells or Keith, but there is probably a reason for some of it in this, that he *never* refuses any case that applies to him, and the Vienna Krankenhause is not likely to be so favorable to recoveries as small wards and private rooms which are often renovated. Moreover, he gives

his assistants many of the simple cases. I have seen his cases so crowded at the Krankenhause that more could not be put in, and nothing but a screen separated the living from the dying. The peculiar features of his method are as follows:—

1st, The use of the Paquelin cautery.

2d, His method of closing the wound.

As to the first, it may be said, that cauterized points are not likely to exude bloody serum, which is the most common source of septicæmia in abdominal wounds and operations. As to the second feature, his deep sutures alone include the peritoneum; the cut edges of which unite in thirty-six hours, preventing any secretion from the overlying wound from entering the abdomen; and the superficial row of sutures may absorb secretion from the wound, but cannot convey it into the abdomen. Time will not permit me to go into further details, and I must leave him with thanks for his kindness to me while in Vienna.

Professor Neusbaum, at Munich, received me with that kindness which he extends to all visiting surgeons. On the first morning in which I accompanied him through the wards of the hospital, he showed me his three hundred and thirty-fourth ovariotomy case, on which he had operated a few days before. Although I remained nine days with him, I did not see him open the abdomen, no case applying. He gave me, however, a description of his method of ovariotomy. It is as follows: The night previous to the operation his patient sleeps with a wet carbolized compress bound to the surface of the abdomen. His anæsthetic is chloroform. When the patient is on the table, her abdomen is well scrubbed with soap and water and then washed with carbolized water. The room is warm, and he operates under the spray of two Lister lamps. His incision is made in the linea alba, and all vessels are ligated with carbolized catgut before he divides the peritoneum. He uses an ordinary trocar of large caliber. He ligates adhesions with carbolized catgut, and divides them with the scissors. In some cases where the adhesions are so firm and close as to make it expedient to leave a section of the cyst he does so, and, I think, denudes it of secreting surface. This method was original with the late Washington L. Atlee, and I saw him do it at least ten years ago. He ligates the pedicle in sections with catgut ligatures, having first grooved it with a clamp for the

reception of the ligatures. He now cuts the cyst away and drops the pedicle in. He carefully cleanses the abdomen, and mops all raw surfaces with iodoform and dusts the powder into the abdomen. He closes the incision with catgut sutures, including the peritoneum. He strews iodoform powder along the line of the wound, and covers all with a complete Lister dressing. His cases usually recover, even after severe operations, in fifteen days. He is a thorough Listerist even to minute details.

At Berlin I witnessed a great number of operations by various operators. The work of two of these will suffice to cover the text which I have adopted. The most prominent is Professor Schroeder, one of the most celebrated gynæcologists in Europe, and well known as the author of one volume of Ziemsen's Cyclopedia. I saw him operate a great many times. In these operations he frequently opened the abdomen. In a laparotomy his incision is always in the linea alba. His patient chloroformed lies on a table after the manner of Sir James Y. Simpson, as given in his well-known woodcut. The room is warm and filled with carbolized spray. His patient's feet are to the window, her legs are covered with a sheet, and her clothing is drawn up about her chest. Her entire abdomen is left bare. It is well washed with carbolized water before the operation. Professor Schroeder stands upon the left side of his patient and divides the abdominal wall from below upwards. He does not use a grooved director. His first incision reaches to a point just below the umbilicus. If the cyst is not very large, or the tumor be a solid one, either of which will not come through the opening, he extends his incision above the umbilicus and turns out the tumor, and if it be a cyst he may or may not empty it. If the cyst be a large one, simple or compound, he thrusts in his knife and incises it; and while its contents are pouring out his assistant seizes the cyst by one lip of the incision with a pair of Wells' cyst forceps, and, as it collapses, draws it out of the abdomen. If other cysts require reduction he enters them with the knife through the cyst already opened. I have never seen him use a trocar. The fluid runs in a torrent down between the patient's legs and falls into a tub at the end of the table. He ligates all adhesions with carbolized silk and divides them with the scissors. He ligates the pedicle in sections, and is particular to tie separately its

arteries. He now cuts away the cyst and drops the pedicle in. He uses in all his ovariotomies but four tools,—a knife, artery forceps, a cyst forceps, and a pair of scissors—all of which are on a stand at his left hand in a little dish of carbolized water. A nurse at his right hand holds a basin of clean carbolized water, with which he makes the *toilette de peritoneum.* Before closing the abdominal wound he places a large sponge over the intestines. He now passes from side to side, including the entire depth of the abdominal wall, sutures of carbolized silk. Gathering these up he draws the incision together, and, seizing the incision and sponge beneath, squeezes them together for a moment with his hand. He now again separates the lips of the incision, and between the ligatures withdraws the sponge. He now closes the wound. An antiseptic dressing completes the operation. The rapidity with which he operates may be estimated from the following clipping from my note-book:

Berlin, January 29, 1882.—Witnessed this morning three ovariotomies by Professor Schroeder. They were all done on the same table and in the same room. He completed the three cases in ninety minutes. This included all the time spent in chloroforming the patients and removing them to bed. The second time I saw him operate he shaved off from the surface of the uterus a large solid tumor. There was no pedicle to ligate, and he cut it away flush with the uterine surface, having first thrown around the uterus, as low down as possible, a rubber cord. The wound on the uterus was elliptical in shape, and he completely closed it with a double line of silk sutures, the outer line uniting the peritoneum over the inner line. On the morning of February 5th I saw him remove a large myoma with the fundus of the uterus and both ovaries. He controlled the hemorrhage in this case with his rubber cord. On January 14th I saw him extirpate the entire uterus through the vagina for cancer of the cervix. This operation, I have already stated, was first accomplished by the older Langenbeck in 1813, but was not successfully followed up by others. The present hopeful prospect of the operation is probably due to Professor Freund, who devised the following method of total extirpation of the organ. His first step was complete disinfection of the diseased portion with carbolic acid, for which purpose salicylic acid and iodoform are now used. He divided the abdominal wall in the linea alba to the lowest possible point. He lifted

out the intestines, tied the broad ligaments in sections, completely securing their blood-vessels. He then divided the vaginal walls from the uterus *per vaginam*. Next he divided the peritoneum in the utero-vesical cavity, and with the fingers separated the bladder from the uterus. The remaining attachments were now divided and the uterus lifted out. The wound into the vagina was closed with sutures, including the vaginal wall, cellular tissue and peritoneum. Bardenhauer first introduced the vaginal drainage tube. Rydygier suggested and Freund adopted primary division of the vaginal mucous membrane; otherwise the operation as by Freund remained unaltered. Professor Schroeder claims that extirpation by the vagina is the better method. However, where the vagina is very small or the uterus very large Freund's method has no substitute so good as itself. It will not become obsolete. Professor Schroeder on this occasion operated for the twelfth time. Of his eleven cases, nine had recovered from the operation and two had died of secondary hemorrhage.

Total extirpation has been revived by Professors Schroeder, Billroth, Czerny, and Dr. Martin. He operated in the following manner: The patient lay upon her back in an operating chair, her shoulders and chest were higher than her pelvis. Her limbs were separated, elevated, and supported by leg rests. One assistant gave the anæsthetic and one stood at each leg of the patient. The operator sat in the position of the lithotomist. One assistant depressed the perineum with Simons' speculum. Two lateral retractors, held by the assistants, separated widely the lateral walls of the vagina. The vault of the vagina was now well exposed. The operator now seized the neck of the uterus with a pair of forceps, and drew the organ well down. With a double-edged knife he now made a semilunar incision, dividing the vaginal wall down to the cellular tissue, thus separating the anterior vaginal wall from its uterine attachment. With the thumb of his right hand he pushed the cellular tissue, lying between the bladder and uterus, upwards, while with the forceps in his left hand he kept up traction on the uterus itself. Twice he stopped and ligated two bleeding vessels on the surface of the uterus. He now passed a long silk ligature through the cut edge of the anterior vaginal wall, tied its ends together and passed it over the pubis. The object of this ligature was to secure the end of the vagina, that it might be easily

distinguished in the final closure of the wound. With his thumb he completed the separation of bladder and uterus as high as the peritoneum, but before opening the latter a male catheter was passed into the bladder to verify the position of the parts and to see that the bladder had not been opened. The peritoneum was now divided and its cavity was open, the uterus being separated from the bladder. The neck of the uterus was now carried well forward under the pubic bone, the organ being retroverted; the posterior vaginal wall was now divided from the neck of the uterus in the same manner as the anterior wall had already been. With the thumb the cellular tissue was pushed back and the peritoneal cavity posterior to the uterus was opened. The cut edge of the posterior vaginal wall was now caught up in a long double ligature, the ends of which were tied together and left hanging out over the speculum. The uterus was now free, both in front and behind. The fundus of the retroverted uterus was now drawn into the vagina. The broad ligaments were now securely ligated with strong carbolized silk ligatures and divided from the uterus. The latter was then removed. The operation was done under a stream of carbolized water of 2½ per cent. strength. This stream, as it flowed back over the speculum, cleaned out all the blood and other secretions. The long ligatures fixed in the cut edges of the vaginal wall were now taken hold of, and, guided somewhat by them, the operator now passed two silk sutures on each side of the median line of the vagina. These sutures united the cut edge of the anterior to the cut edge of the posterior vaginal wall, and were supposed to include the vaginal wall and peritoneum. A few centimeters of a pencil of iodoform were now passed into the cavity of the abdomen. This was after the method of Dr. Miculitcz, of Vienna. A large rubber drainage tube was now passed into the cavity of the peritoneum through the opening still remaining in the top of the vagina. Several stitches were now introduced, completely uniting the cut edges of the vaginal walls around the tube. A quantity of iodoform powder was strewed in the vagina, and the latter was filled around the tube with a cotton tamponade. The tube protruded beyond the vulva a few centimeters, and the end was covered with iodoform cotton. On the morning of January 22, 1882, I saw him open a flat abdomen. He lifted out of it a small ovarian tumor, not larger than a lemon,

but it was twisted on its pedicle three complete turns, six half revolutions of the growth were required to untwist it. It was black. He had felt the tumor through the vagina, and the woman had so much pain that he opened the abdomen to find the cause of it. His prompt boldness saved her life. The case to me was entirely unique.

The peculiarities in Professor Schroeder's method of laparotomy are these:

1. He stands on the left of his patient.
2. He cuts from below upwards.
3. He uses no trocar.
4. He uses but four tools.
5. He uses but two assistants.
6. He constricts the uterus with a rubber cord.

I will not detain you longer than to acquaint you in a few remarks with the work of one more operator, Dr. A. Martin, of Berlin.

By him I witnessed a very large number of operations in the vagina and in the cavity of the peritoneum. His cervix operation for double laceration differs very widely from that known in America, and devised by our distinguished colleague, Dr. Thomas Addis Emmett. Dr. Martin in all these cases, when prepared to operate upon, effectually curettes the uterus, and injects its cavity with a solution of persulphate of iron. He then washes out the uterus effectually with a stream of carbolized water, deliberately running the hard rubber nozzle of the tube, leading to the reservoir holding six gallons, up to the fundus of the uterus, pushing in and pulling out the nozzle with as much indifference as if he were washing out a gun-barrel. Having accomplished this, he seizes the cervix with a pair of forceps—they take hold of the anterior lip, and are handed to an assistant, who draws the lip upwards. The operator seizes the lower lip and draws it downwards; in the cleft of the laceration he cuts across the cervix, the incision being about sufficiently deep to make the laceration even on both sides. He now operates on the lower lip. Doubling it well back, he cuts across it at a point where his first incision began. This cut goes nearly half through the lip, and is nearly at right angles to the cervical canal. Now lifting the lip up, he makes a second cut nearly at right angles to the first. This cut starts at the junction of vaginal and cervical mucous membrane, and goes

across the whole lip up to the first cut. The result is that a triangular piece, or, if you like, a wedge-shaped piece, the front of which is covered by the everted and diseased mucous membrane, is cut away. With a curved needle he now stitches the vaginal and cervical mucous surfaces closely together. He now deals in the same manner with the upper, and finally stitches the sides of the original cut together. When he finishes, it would be hard to conceive of anything more effectual or more perfect. I have seen him do this in a great many cases, and they have had no trouble after the operation, and the results are most excellent. In unilateral lacerations he prefers and does Emmett's operation. Dr. Martin is still a young man, but he has opened the abdomen upwards of two hundred times, and he has extirpated the entire uterus *per vaginam* twenty times. I have seen him do it, but his operation does not differ sufficiently much from that of Professor Schroeder that I need detain you with it. Nor does his method of doing intra-abdominal operations for tumors differ much from Professor Schroeder's. However, he imitates Péan, of Paris, and in doing a laparotomy always sits between the legs of his patient. She is on a low and short table, and while he sits between her legs they are lying across his, her feet dangling at his side below his elbows. As a diagnostician he is very expert. I have seen him open the abdomen for tumors not larger than a lemon and get them. I have also seen him open the abdominal cavity in the linea alba, cut into a hæmatocele, turn out the clots, run a pair of forceps from the bottom of it into the vagina, with them seize a large drainage tube, pull it back until one end was in the sac of the hæmatocele, then stick together the split roof of the hæmatocele, clean out and close the abdomen. His work is all done under careful antiseptic precautions, the spray included. And his results are simply wonderful. Out of more than a hundred severe operations since I came here, two months ago, some of them laparotomies, he has lost but one patient. In this patient he removed the uterus above the vaginal attachment with a very large interstitial fibroid tumor and several smaller ones. He is the author of the new operation for extra-uterine pregnancy, in which the placenta is removed and the cyst drained by the vagina. But the operation is already published.

It was my intention to stop with this, but if you will

bear with me a moment I will give you one of the rare circumstances of this world. To-day, February 17, 1882, when I supposed I had closed this paper, it was my privilege to see the present Professor Langenbeck repeat the great achievement of his uncle, and remove the entire uterus *per vaginam*. I will not detail the operation. But before beginning he said, in his pure and classic German: "Gentlemen, my deceased uncle was the first to make total extirpation of the uterus *per vaginam*. He performed the operation at Cassel in 1813. The specimen, the entire uterus, is still preserved at Göttingen, and an old physician is still living who assisted him in the operation. The patient lived afterwards for thirty years."

Permit me, gentlemen, to thank you for your patience, and to hope that if spared to return to my native State I may meet you all next year.

ADDRESS IN MENTAL DISORDERS.

REFLECTIONS ON CRIMINAL LUNACY, WITH REMARKS ON THE CASE OF GUITEAU.

By CHARLES K. MILLS, M. D.,

PHILADELPHIA.

While hesitating as to the choice of a subject for the Address in Mental Disorders, the dramatic trial of Guiteau intensified my interest in the question of crime and its theoretical and practical relation to insanity. I have therefore concluded to embody in this address some reflections on crime and criminal lunacy, with some special remarks on the case of Guiteau.

The psychology of crime is a subject of the highest importance to society, and the increasing inclination to study it in the scientific spirit and by scientific methods, is a sign of advance. Crime is often, although not always, the result of the organization of the individual, the outcome of the anatomical conformation and physiological development of the brain.

The distinction between vice and crime should always be borne in mind. Technically, crime denotes transgression of the law, while vice refers to the depravity of the individual. The vicious and depraved are not always criminals; and, on the other hand, criminals are not always vicious and depraved. The psychology of vice is really the fundamental question. Vice, according to Bucknill,* is probably more infectious and polluting than crime; and while the latter is often the result of insanity, the former is very frequently the cause of it.

* Quoted by Nicolson, *Journal of Mental Science*, London, July, 1877.

Moriz Benedikt,* of Vienna, believes that he has discovered the anatomical basis of criminality in a deficient development of the convolutions of the brain, and a consequent excess and tendency to confluence of fissures. Professor A. J. Parker,† of Philadelphia, Professor William Osler,‡ of Montreal, and others, have conducted investigations which show that these anatomical peculiarities are present in the lower classes of mankind in general.

My own studies of the human brain have been chiefly made at the Philadelphia Hospital, many of the pauper patients of which institution constitute the same sort of material as that referred to by Bendikt as approaching the criminal type,—those who have suffered complete shipwreck in life through a low grade of intelligence, imperfect motor development, or through crimes and vice; for instance, inebriates, epileptics, prostitutes, etc. Independently of any knowledge of Benedikt's researches, I have frequently observed unusual and peculiar development of cerebral fissures.

At the meeting of the Philadelphia Pathological Society held February 23, 1882, I presented the brain of a negro murderer,§ in which the tendency to unions between typical fissures, and other peculiarities of conformation referred to by Benedikt, were strikingly manifest. Similar tendencies were clearly exhibited in the brain of a hystero-epileptic, recently examined in connection with Dr. I. N. Kerlin, Superintendent of the Pennsylvania Institution for Feeble-minded Children.

Crime, as Benedikt indicates, should be viewed as the psychological act of the criminal. Criminals should be studied, not in mass, but as individuals, just as disease should be, and to a large extent is, investigated. Attempts at the classification of criminals by scientific methods have been made recently by Ferri, Krapelin, Lebon, Lacassagne, and others.

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* Anatomical Studies upon Brains of Criminals. By Moriz Benedikt, Professor at Vienna. Translated from the German by E. P. Fowler, M. D. New York: William Wood & Co., 1881.

† Proceedings of the Academy of Natural Sciences of Philadelphia, 1878.

‡ On the Brains of Criminals. With a Description of the Brains of Two Murderers. By William Osler, M. D., etc. Canada Medical and Surgical Journal, February, 1882.

§ Philadelphia *Medical Times*, May 20, 1882.

Lacassagne* divides criminals into, first, criminals from sentiment or instinct, under which are comprised the true incorrigible, habitual criminal, who commits crime in consequence of his psycho-physical constitution, and on whom neither punishment nor education can have any effect. Second, criminals by act or on occasion. The passions (anger, jealousy, cupidity, etc.), or the feeling of impunity, lead this class to commit crime. The large majority of criminals belong to this class, and in it alone is punishment likely to be of avail. Third, criminals of thought, or, more properly, insane criminals, who, as Lacassagne remarks, should be treated in a criminal asylum, and not with the other insane.

A good practical classification of criminals is that mentioned by Tyndall,† in one of his admirable popular lectures, as having been made for him by the governor of one of the largest prisons of England.

The official gave as his belief, that the prisoners in his charge might be divided into three distinct classes. The first class consisted of persons who ought never to have been in prison. External accident, and not internal taint, had brought them within the grasp of the law, and what had happened to them might happen to most of us. They were essentially men of sound moral stamina, though wearing the prison garb. Then came the largest class, formed of individuals possessing no strong bias, moral or immoral, plastic to the touch of circumstances which would mould them into either good or evil members of society. Thirdly came a class—happily not a large one—whom no kindness could conciliate, and no discipline tame. They were sent into this world labelled "incorrigible," wickedness being stamped, as it were, upon their organizations.

Crime and insanity are therefore related, but crime is by no means always a form of insanity. A large proportion of criminals are practically insane; they are not of sound brain and mind. In discussing the question of responsibility, however, too much stress is laid upon words; "sanity" and "insanity" are really relative terms. In some cases responsibility should be made the test of sanity, rather than sanity the test of responsibility. The question of responsibility, when it is an open one, should

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* *Du Criminal devant la Science Contemporaine*, 1881; quoted in *Journal of Nervous and Mental Disease*, January, 1882.

† Quoted in *Journal of Mental Science*, April, 1878.

always be determined by a painstaking scientific investigation into each individual case.

Criminal responsibility cannot be adjudged by the test of a knowledge of right and wrong. Criminals, sane or insane, can generally distinguish between right and wrong. They often glory in wrong-doing, knowing that it is wrong-doing. In other cases, as Dr. Ray* puts it, the particular criminal act becomes divorced in the mind of the criminal from crime in the abstract. Even the presence or absence of delusion does not always constitute an absolute test of insanity and responsibility. Sometimes those who are most insane have no delusions; and, on the other hand, sometimes those who are medically and legally sane have temporary delusions. Responsibility must be measured in doubtful cases by the power of control. It is a question of power rather than knowledge. Could he help committing the crime? is the crucial question. Every scientific aid, medical and legal, should be made use of in answering this question correctly, so that neither society, on the one hand, nor the accused individual on the other, shall be wronged.

Dr. Nicolson† refers to a bill introduced into the House of Commons in 1874, by the late Mr. Russell Gurney, with the view of amending the law of homicide. I agree with him, that in this bill is found the common ground upon which the varied and discordant estimates of criminal responsibility may be harmonized. The bill was drafted by Sir J. Fitzjames Stephen, a most competent authority; and on the part of the subject with which we are at present concerned, it suggested for enactment that "homicide is not criminal if the person by whom it is committed is at the time when he commits it prevented by any disease affecting his mind

(*a*) From knowing the nature of the act done by him.

(*b*) From knowing that it is forbidden by law.

(*c*) From knowing that it is morally wrong.

(*d*) From controlling his own conduct.

But homicide is criminal, although the mind of the person committing it is affected by disease, if such disease does not in fact produce some one of the effects aforesaid in reference to the act by which death is caused, or if the inability to control his conduct is not produced exclusively by such disease. If a per-

* A Treatise on the Medical Jurisprudence of Insanity.

† *Journal of Mental Science*, July, 1878.

son is proved to have been laboring under any insane delusion at the time when he committed homicide, it shall be presumed, unless the contrary appears, or is proved, that he did not possess the degree of knowledge or self-control hereinbefore specified.

Cases such as Guiteau's are those about whose responsibility it is most difficult to decide; about which so many fierce conflicts, forensic, medical, and journalistic, have been waged.

Nicolson* speaks of these cases as a midway region where the *pros* and *cons* as to the sanity or insanity of a particular act or person are so mixed up that the finding of individuals, so far from meeting with universal sanction, discloses public opinion on the equipoise, and perhaps a life trembling in the balance.

"Upon what grounds, or variety of grounds," he says, "do the generality of individuals form their opinion in this matter?"

"There are those who cannot get over the impression formed by them on the first blush of the case. There are those who, in the fullness of their sympathy or repugnance, are unable or unwilling to subordinate their emotions to the matter-of-fact exercise of reflection. There are those who, practically, if not always, as a matter of principle, rely upon their estimate of motives as a test of responsibility and of mental condition. There are, strange to say, those who, looking upon mind as a mere metaphysical abstraction, repudiate its dependence upon a physical substratum, and would deny the utility of observations or of investigations which imply the necessity of a material basis for all mental manifestation, whether sound or unsound. There are, moreover, those who, not always mindful that the brain is the physical fount of mental action, take refuge in the illogical and insufficient traditionary dictum of the law that a knowledge of right and wrong is the touchstone of mind in criminal cases: a test-doctrine which is capable of partial application only, and which, in practice, necessitates a division of insanity, estimated at the time of commission of a particular criminal act, into two sorts—the responsible and the irresponsible—a classification which the public is never likely to accept."

Where does the crime of Guiteau belong? Was his crime, as Dr. Allan McLane Hamilton† asserts, simply the result of a low state of the morals, for which the individual is solely responsible; or was he, by virtue either of his inheritance or his environ-

* *Journal of Mental Science*, April, 1878.

† *Boston Medical and Surgical Journal*, March 9, 1882.

ment, or of both, insane and irresponsible? It is necessary to make a critical study of the case before coming to a conclusion. The weight of evidence is on the whole in favor of his insanity. As to the form of his insanity some doubt may exist.

Many proofs of the existence of insanity and insane tendencies in his relatives, direct and collateral, have been adduced. His family history, as given by Folsom*, is a record which will go far to convince the alienists of the world with reference to his unstable mental inheritance: "His paternal grandfather was a physician, highly respected, and of intense religious feeling. His father, a man of character and intellect, of uncommon business capacity, was a religious fanatic, devoted to free-love socialistic teaching during the last thirty years of his life; he died at the age of seventy, of some disease of several months' duration, and attended with emaciation and delirium. By some of his family, and some of those who saw him in his relations to his delusion, this father was considered at least partially insane, but the more general opinion apparently was that he was only eccentric. Eighteen years ago he visited the Central Hospital for the Insane at Jacksonville, Illinois, to take a patient there, and he remained several days. His delusions with regard to his own intimate relations with the Deity,—his attempts to cure the insane by the laying on of hands, supposing himself to be divinely commissioned to effect cures in that way, and his general demeanor, led Dr. McFarland, the medical superintendent of the asylum, to at that time consider him insane. One paternal uncle of the assassin died insane in an asylum; a second was a drunkard, and finally imbecile; of one paternal aunt, who died of 'consumption', and who had an insane daughter, her husband having also been insane, it was testified and denied that she was morbidly in dread of her family's going to the poor-house; another paternal aunt, with regard to whose mental condition the testimony was contradictory, but of whom there was some evidence of insanity, had an insane son committed to an insane asylum. Guiteau's paternal grandmother died of consumption. His mother, at the time of his birth, had been confined to her bed for some time with a disease attended with marked cerebral symptoms, for which her head had been shaved; and her two children, born in later life, died at the ages respectively of two years and twenty months. His only sister, after her evidence in court, had an

* *Boston Medical and Surgical Journal*, February 16, 1882.

attack of *petit mal*, to which her physican said she was subject; and he also said that she had earlier in life had puerperal mania. Guiteau's only half-sister, aged about twenty-six, has exophthalmic goitre; and of his only half-brother, about twenty-three years old, no testimony was given."

I will give from the hypothetical question of the District Attorney, at the trial, and other sources, some of the salient points in the life of Guiteau.

At the age of nineteen years he left school, and entered the Oneida Community, where he remained for five years, then left for a few months, and subsequently returned and remained for another year, at the end of which time he withdrew from the community, and went to New York, where he contemplated the establishment of a daily journal to be called the *Theocrat*. In a letter to his father, written in 1865, speaking of his project for the establishment of a *Theocratic Press*, which was to provide the whole country with daily religious instruction, he claimed that he was in the employ of Jesus Christ and Company. The same letter abounded in similar insane extravagances. He studied law, was admitted to the bar, and practiced in a pettifogging way in New York and Chicago. He married, and afterwards committed adultery to procure a divorce. In 1874, he entered a ridiculous suit for one hundred thousand dollars against the New York Herald. In 1875, he had a project of reviving the *Inter-Ocean*, a bankrupt Chicago paper, of which he was to be the editor. In 1875, apparently in a moment of maniacal excitement, he raised an axe to strike his sister. A physician at this time said that he was insane, and advised that he be taken to an insane asylum. He afterwards traveled about the country delivering trashy lectures, maintaining that he was a great evangelist. In 1879, he published a book of his lectures called Truth, a Companion to the Bible. In the Presidential campaign of 1880, he wrote a speech, which he once delivered in part. After the election of Garfield, he began to put in important claims for office. He first applied for the position of minister to Austria, and subsequently for that of Consul-General to Paris. He urged his claims in the most absurd manner, both by letter and in person, upon President Garfield and Secretary Blaine. According to his own way of putting the matter he now "conceived the idea of removing the President." Finally came the terrible tragedy, with the inci-

dents immediately surrounding it, with which all reading people are now only too familiar.

He claims to have been inspired on several occasions during his life: once in connection with his entering the Oneida Community; once preceding his attempt to establish the *Theocrat;* once in connection with the writing of his lectures and his book, "The Truth;" and at the time of shooting the President, this last claim being made after the commission of the act.

A not uncommon indication of one form of insanity in men is that which shows itself in the persecution of women with absurd plans of marriage. Dr. Beard* gives the details of two instances of this kind, one of which, at least, I do not think was alluded to during the course of his trial: "While in New York last winter, after the election, he became infatuated with the idea of marrying the daughter of a millionaire living on Fifth Avenue, whose name he would not give. This lady he followed—as so often happens with monomaniacs—wherever she went; he went to the church which she attended, passed by the house where she lived, up and down the street; went twice to the house and asked to see her, and was told that she did not know him; he wrote letters to which she sent no replies; he watched and waited for her when she left her carriage; in short, he acted just as erratic maniacs generally do; and followed her thus for a long time, whenever and wherever he could find a chance." Out West he followed another young lady in the same way.

In brief, his life from about his eighteenth year until the period of his crime, was a record of religious fanaticism and delusion, of lust and immorality, of shiftless wanderings, of chimerical enterprises, of impulsive tendencies, and of maniacal outbursts.

When he shot the President he was evidently under a delusion as to what he called his duty to the country, and as to the effect which the act would have upon his own future. The condition of his mind at this time was probably that which has been so well described by Dr. Ray, and to which I have already alluded in speaking of criminal responsibility in general. The *particular* criminal act became divorced in his mind from its relations to crime in the *abstract;* and being regarded only in

* *Journal of Nervous and Mental Disease*, January, 1882.

connection with the object which he hoped to obtain, and which he could see no reason to refrain from pursuing, was viewed as of a highly laudable and meritorious nature.

His conduct during the trial was certainly such as to indicate insanity to an impartial observer. Sometimes shamming, sometimes in earnest; fawning in fear, or screaming denunciation, he was consistent only in his inconsistencies. "He showed himself to be quick-witted, sharp, gifted with an excellent memory, unscrupulous, uncontrolled in temper, and almost entirely lacking in judgment and discretion. His controlling idea seemed to be to guard his reputation as a man of purity, ability, high attainments, Christian virtues, and political importance. It made no difference what was said on either side; no matter whether it injured his cause or helped it; whether it insulted his counsel or the other side—hit or miss, friend or foe, with the true indifference of the lunatic, he made his criticisms. The dignity of the court-room, the threats of the judge and bailiffs, of the district attorney or the United States marshal—he was indifferent to all. That instinct in the human breast which makes us bow before the majesty of the law and tremble at her bidding was not within him. With the volubility and lack of self-control of the insane man, his voice was heard above all others, and it must be remembered that this was the case from the beginning to the end of the trial with everybody, and nothing could have silenced him, in all probability. An exhibition in all ways so extraordinary as the conduct of Guiteau at his trial is not, to my knowledge, on record; and it is not too much to say that it would be a disgrace to American jurisprudence were it not explainable on the ground of insanity."*

To some the conduct and utterances of Guiteau during the trial suggested the idea of feigning, of shamming, or playing a part. Even admitting this, it would by no means be conclusive evidence of sanity. The probabilities are that *some* of his performances were in the nature of acting. Dr. Kiernan has thoroughly discussed this subject of the "Simulation of Insanity by the Insane," in a paper read before the Chicago Medical Society, March 20, 1882.* Assuming an abnormal mental con-

* The Mental Status of Guiteau, the Assassin of President Garfield. By Walter Channing, M. D. *Boston Medical and Surgical Journal,* March 30, 1882.

* *Journal of Mental and Nervous Disease,* April, 1882.

dition in this criminal—a fact which he believed most firmly—and regarding the case as one of primary monomania, simulation, according to Kiernan, is what might have been expected. Guiteau's simulation, however, is, he believes, of rather a peculiar type. Insanity, as claimed by him, is different from the idea of insanity as held by alienists, and is simply a quasi-legal plea that, as he was inspired by the Deity to remove the President, his free-will was destroyed; and, according to him, a man without a free will is, in the legal sense, insane. To use his own phrase, he was "Abraham mad, but not crank mad." "This plea was fatal to a belief in his insanity, already existent in the minds of the more intelligent laity, and had a very simi lar effect on a large number of the profession."

Kiernan had collected in his paper some of the cases of simulation of insanity by the insane reported in medical literature, supplementing them by three cases coming under his own observation. Such cases, while not frequent, were not excessively rare. The cases cited were from Nichols, Ray, Workman, Gray, Spitzka, Delaseauve, Laehr, Pelman, Ingels, Stark, and Hughes.

Dr. Kiernan concluded, from the cases collected by him, that the insane could and did feign insanity for a purpose; that that the psychosis most likely to feign insanity is the *primäire verrücktheit* of the Germans, the *manie raisonnante* of the French, the imbecility of the first class of Ray, the *monomania* of Spitzka; that the insane may feign insanity when accused of a crime, thus causing a new element to enter into diagnosis. He called attention to the fact that the theory which considered Hamlet as an insane man feigning insanity best explained the psychological problems of that tragedy.

Since the trial, his conduct has been eccentric, and outrageous, and shows an utter miscomprehension of public opinion.

Varying degrees of weight have been given, even by the witnesses for the defense, and the believers in the insanity of Guiteau, to the physical evidences of disease presented by him. They seem to me to be of sufficient importance to be taken into consideration, in coming to a conclusion as to the form of Guiteau's insanity.

A plaster cast of Guiteau's head made by Clark Mills, the sculptor, it is claimed by the defense, showed deformity. According to Spitzka, Guiteau's occiput is flattened (as those of thir-

teen subjects of *manie raisonnante* described by Campagne), and that there is a bold jutting out on the left side, and no fair measurements can be taken in a frontal plane two inches behind the ears, without showing an unusual degree of deformity.

On the other hand, Dr. Hamilton, Kempster, and others, on the trial, testified to no unusual want of symmetry in the head.

Kiernan* asserts that his face is markedly asymmetrical, the asymmetry extending to his pupils. Folsom states that, upon striking the patellar tendon, the foot of each leg jerks quickly, describing an arc of about twelve inches. The tongue is flabby, and local fibrillar twitchings are observed, first in one part of it and then in another. In rapid speech the articulation seems without conspicuous fault, which is certainly not the case when words are spoken slowly. Channing † says of Guiteau that his pupils are unequal in size, and that the axes of his eyes are a little dissimilar. Spitzka testified to defective innervation of the facial muscles, asymmetry of the face, and pronounced deviation of the tongue to the left. He described Guiteau as having a lopsided smile, a characteristic feature in primary monomaniacs, which he discovered by ordering him to smile, when the facial folds rose higher on one side than they did on the other.

Dr. Hamilton‡ says that, on his first visit to Guiteau, he noticed what appeared to be a fine fibrillary tremor in the upper cheek muscles and eyelids; but adds that this was after an exciting day in court, and that he never saw it again. He also says that the unequal tremor of the tongue, alluded to by Dr. Folsom, was not observed by him except upon this occasion, and that it was not manifested except when the tongue was kept protruded for some time. He expresses his belief that the tremor did not resemble the tremor of general paresis, and states that it was not accompanied by tremor of the lips. He noticed that the tongue was slightly protruded to the left side, but it was not atrophied, and it could be freely moved in other directions. He tested his speech carefully, but found no impairment; explaining, however, that in court he momentarily hesitated because his ideas were evolved too rapidly, and the function of the cerebral speech-

* *Chicago Medical Review*, December 5, 1881.

† *Boston Medical and Surgical Journal*, March 30, 1882.

‡ *Boston Medical and Surgical Journal*, March 9, 1882.

centre did not seem to keep pace. A careful ophthalmoscopic examination by Dr. Hamilton and Dr. Loring failed to reveal any neuritis or atrophy. He was found to be hypermetropic, and the left eye was the seat of conjunctivitis at the first visit, and quite sensitive; and Dr. Hamilton says, as a result, the pupil was slightly contracted, but only upon one occasion was this observed. He tested the tendon reflex, and found a moderate responsive action, equal on both sides, but with no secondary jerk. His pulse was found to be eighty-eight on two occasions.

It is worthy of remark that Dr. Hamilton, in one of presumably few visits to Guiteau, did find physical evidences of nervous disease, the importance of which he deems it necessary to explain away carefully.

The following medical men testified to the insanity of Guiteau: Dr. James G. Kiernan, of Chicago, Illinois; Dr. Charles H. Nichols, of the Bloomingdale Asylum; Dr. Charles F. Folsom, of Boston, Massachusetts, a well-known specialist in mental diseases, at one time an assistant in the McLean Asylum; Dr. William W. Godding, Superintendent of the Government Hospital for the Insane, at Washington; Dr. James H. McBride, Superintendent of the Asylum for the Insane, at Milwaukee, Wisconsin; Dr. Walter Channing, of Brookline, Massachusetts, connected with a private insane asylum, and formerly an assistant in the Asylum for Insane Criminals at Auburn, New York, and in the State Hospital at Danvers, Massachusetts; Dr. Theodore W. Fisher, Superintendent of the Boston Lunatic Hospital; Dr. Edward C. Spitzka, of New York, a well-known writer and worker in the domain of mental and nervous diseases. At the close of testimony of the prosecution, an unsuccessful effort was made by counsel for the defense to introduce additional witnesses to prove the insanity of Guiteau. Among these was Dr. McFarland, formerly of the Illinois State Asylum for the Insane, at Jackson, by whom it was proposed to show the insanity of Guiteau's father. Another was Dr. George M. Beard, the writer upon neurology and psychiatry, by whom it was proposed to show, on the statements of the two hypothetical questions of the prosecution, that the prisoner was insane.

The defense was conducted in such a peculiar way, however, that only one of these experts was examined at any length. To most of them was put a hypothetical question, the chief point of which was the assumption that the homicide had been

committed under the delusion of divine inspiration. No effort was made, except in the case of Dr. Spitzka, to elicit the special opinions of the experts for the defense, or to obtain the results of their examination of the prisoner. Several of these experts have, however, since published articles on the case in various medical journals. I will give briefly the views of some of these gentlemen, and also of some others who have written upon the subject, although they were not connected with the trial.

Dr. J. G. Kiernan* says of moral sense, in the true meaning of the term, Guiteau has none. He regards the case as one of primary monomania—the *primäire verrücktheit* of the Germans, the *manie raisonnante* of the French. He recalls a number of similar cases in literature. That his moral perversion is a pathological one, as dependent on a cerebral defect as his other abnormal mental manifestation, Kiernan thinks must be evident to every reflecting psychologist. It is of this form of mental alienation that Krafft-Ebing says that the evident symptoms are a moral insensibility, an absence of all moral judgments and ethical conceptions, their place being supplied by purely logically based judgments of a utilitarian character.

Dr. C. F. Folsom†, although considering Guiteau clearly insane, does not give any definite opinion as to the precise character of his mental disease. He, however, makes several suggestions of interest. In the first place, he raises the question whether Guiteau may not have had several attacks similar to sub-acute mania, each in turn leaving him more demented. *First*, when he excited the fears of his friends, at the age of eighteen, by giving up his studies, and becoming absorbed in a deep religious excitement. *Second*, when he attempted the theocratic press. *Third*, in the Greeley campaign. *Fourth*, when engaged in his suit with the New York *Herald*. *Fifth*, during the *Inter-Ocean* project. *Sixth*, when he raised an axe against his sister. *Seventh*, at the time of his wanderings as an evangelist. *Eighth*, when he expected the Austrian mission or the Paris consulship, and ending with the assassination or soon after. It was coincident with these periods of excitement that he persecuted women with absurd plans of marriage. Folsom suggests, secondly, that if Guiteau's type of insanity is congenital, or developed by a blow on his head, or at puberty, or through masturbation,

* *Chicago Medical Review*, December 5, 1881.

† *Boston Medical and Surgical Journal*, February 16, 1882, and March 30, 1882.

there is certainly enough in his family history to make such a result quite possible. This form of insanity is recognized by leading authorities as primary and secondary moral insanity, affective insanity, impulsive insanity, *folie raisonnante*, *moralisches Irresein*, etc. In the third place, Folsom suggests that his condition of exaltation, some apparent ataxia, exaggerated patellar reflexes, flabby tongue, and local fibrillary twitchings, defective articulation when words are spoken slowly, with expansive ideas and mental instability, point to an early stage of general paralysis of the insane. He says that he is by no means sure that Guiteau's case is not like that reported by Christian a year ago in the *Annales Medico-Psychologiques*, of an imbecile who had an attack of maniacal excitement at the age of thirty-one, and general paralysis at about fifty, or one of those where, as Morel says, the incubation period of general paralysis of the insane is the whole previous life-time.

The trial of Guiteau reminds Dr. W. Channing* of what a trial might be if a patient with chronic mania were brought in from an asylum and tried for murder. Provided he were a bright, intelligent man, with delusions of self-importance of such a nature that they had had a bearing on his crime, his conduct might in many ways have been similar to that of Guiteau. Dr. Channing believes that in the way Guiteau uses his writings he resembles also many of the lunatics who possess this mania for writing, especially those who have an exalted form of mania.

In the discussion of Dr. Channing's paper, which was read before the Suffolk District Medical Society, Massachusetts, Dr. T. W. Fisher, another witness for the defense, speaks of Guiteau as without doubt insane; but said that it was difficult to formulate the insanity which all agreed to exist. Almost every alienist had seen people like Guiteau, although of course he had certain individual peculiarities.

Dr. E. C. Spitzka† testified on the trial of Guiteau that the marked feature of his insanity was a tendency to delusive or insane opinion, and to the creation of morbid and fantastical projects; that there was a marked element of imbecility of judgment, and that he had no doubt that he was also a moral imbecile, or rather a moral monstrosity. He defined a moral

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* *Boston Medical and Surgical Journal*, March 30, 1882.

† *American Journal of Insanity*, January-April, 1882 (Nos. III. and IV combined).

monstrosity as a person who is born with so defective a nervous organization that he is altogether deprived of that moral sense which is an integral and essential constituent of the normal human mind, he being analogous in that respect to the congenital cripple who is born speechless, or with one leg shorter than the other, or with any other monstrous development that we now and again see. In the discussion of Dr. Hammond's paper on Reasoning Mania at the meeting of the New York Medico-Legal Society, Dr. Spitzka* said that the most proper term for Guiteau's insanity was a German one, and, as nearly as may be, is translated "original insanity." He thought that Guiteau was born insane. His history was full of insanity. He did not learn to speak until he was six years of age. He had a slight defect of speech. His father was unquestionably a lunatic; his mother was sick when Guiteau was born, and she had other children who were deformed or sickly.

Dr. George M. Beard† holds that Guiteau was taken insane at the age of eighteen years, while attending school at Ann Arbor, Michigan, and has been insane ever since; and that the special type of his insanity is what is commonly and correctly called religious monomania. Although only a part of his delusions were of a distinctively religious character, they all, when traced to their ultimate radicals, had a religious origin, and were complicated with distinctive religious delusions, from which he was never free.

Beard's paper contains many strong truths; some of his points are the following: Guiteau went into court with more abundant and more varied record of insanity than any criminal monomaniac that has ever been brought to trial in any country. Probably no monomaniac patient was ever put into an insane asylum with such a detailed history as has Guiteau. If Guiteau had been in an asylum, or had just escaped from one, at the time he committed the murder, he would never have been tried. There is no asylum in the world that would not have taken Guiteau at once at any time during the past twenty years.

Dr. William A. Hammond,‡ after reciting the facts contained

* *Journal of Nervous and Mental Disease*, April, 1882.

† *Journal of Nervous and Mental Disease*, January, 1882.

‡ Reasoning Mania: Its Medical and Medico-Legal Relations; with Special Reference to the Case of Charles J. Guiteau. By William A. Hammond, M.D. Read before the New York Medico-Legal Society, March 1, 1882. *Journal of Nervous and Mental Disease*, January, 1882.

in the hypothetical question of the District Attorney in the trial of Guiteau, declares that "on such a statement of facts, and with a knowledge of the manner in which the prisoner conducted himself while being tried for his life, his abuse of friends who were endeavoring to save him, his praise of judge and jury and opposing counsel at one time and his fierce denunciation of them at another, his speech in his defense, his entire lack of appreciation of the circumstances surrounding him, his evident misapprehension of the feelings of the people toward him, his belief in the intercession of prominent persons in his behalf, and of his eventual triumph, and the many other indications with which you are all familiar, especially his conduct after sentence was pronounced,—I have no hesitation in asserting that Guiteau is the subject of reasoning mania, and hence a lunatic. There is not an asylum under the charge of any one of the medical experts for the prosecution that does not contain patients less insane than he."

Thoughtful men cannot fail to have been struck with the faulty method of using expert testimony in the trial of Guiteau. Truly, in this respect the trial was a spectacle for gods and men. In the discussion in Dr. Hammond's paper on Reasoning Mania, read before the Medico-Legal Society of New York, Dr. Barry, who claimed to know something of the inside working of the Guiteau trial, and was in the caucus of the prosecution, said that Guiteau was put through after the way they kill hogs in Chicago. No matter how the hog went in at one end of the cylinder, he came out at the other still a hog. The prosecution was determined that Guiteau should come out the way they wanted, and they succeeded. This, perhaps, is putting the matter too strongly; but, without a doubt, the so-called expert testimony was not used properly, nor to the best advantage. The trials of criminals, particularly of criminals whose lives are at stake, should be conducted in a strictly scientific manner. As the law at present is administered, courts of justice, so called, become too often courts of injustice, or arenas of public display. Experts should not be partisan. A commission of experts should decide as to the insanity of prisoners charged with crime, and alleged to be insane. The work of this commission should be for the court, not for prosecution or defense. This plan has been recommended by our most thoughtful criminalists and alienists.

At the meeting of the American Medical Association in 1881, Dr. C. F. Folsom, of Boston, read a paper on "The Relation of the State to the Insane," in which he argued in favor of the establishment of State Lunacy Boards, to look after the interests of the unfortunate insane, both within and without asylums. In some instances, at least, the examination of criminals, supposed to be insane, could be referred to such boards, before placing the accused on trial.

Dr. Godding, the medical superintendent of the Government Hospital at Washington, (quoted by Folsom) expresses himself very justly and forcibly on this point, in speaking of the case of Guiteau. He says:

"In a case of as grave importance as this I would not express an opinion, until I was in full relation with all the facts in the case. A man's impression is very different from his opinion. An expert's opinion should only be declared after a careful consideration of all the facts produced in evidence, and a careful study of the prisoner. . . . There is a very grave difference between medical insanity and legal irresponsibility, and on that difference this case hinges. . . . I am sorry to see the experts classed on one side or the other. I hope the golden age is not far distant, when the medical expert—all experts, in fact—will simply appear as friends of the court."

What disposal shall be made of the criminal insane? This question brings up the subject of their punishability What shall be done with those who, having committed crimes, are shown by an examination into their life history, their mental co dition at the time of their acts, and their subsequent and present conditions, to be in all probability the victims of insanity. Shall these people, acquitted on the ground of insanity, be set free in the community, after a short stay in an asylum, and thus society be again endangered? On the other hand, is it just, humane, or politic, to punish with the full penalty of the law those who, by virtue of the "tyranny of their organizations," are incapable of restraining themselves from the commission of criminal acts?

One of our daily papers (the New York *Star*) aptly puts one of the most practical aspects of this question as follows:—

"We can put our finger at once upon the reason why acquitting Guiteau upon the ground of insanity has found so little favor even among the most intelligent people. That reason is

because the confinement of an insane man ceases with his insanity. Thus, a man commits a murder; is acquitted as insane; is sent to an asylum; is restored to his senses within a year or two, and is then released to flourish his bloody hands among respectable citizens, or to repeat his crime and his defense. We have now in New York several murderers, walking the streets, who were only insane long enough to escape the consequences of their crimes. The law is thus made a mere farce, and murder goes unpunished. Really there are very few people who are not convinced that Guiteau was insane when he shot Garfield, and that he is now as crazy as a loon. But they argue that if he escaped the gallows upon this plea, he would recover his senses by and by, and demand his liberty. Rather than that, they prefer to see an insane man hung. They think that Guiteau ought to be punished for what he has done, and hanging him is the only sure method of punishing him."

Even some of our own profession would seem to contend for the extreme views of the laity with reference to such cases. Dr. William A. Hammond* thus expresses himself:

"Let Guiteau suffer the full penalty for his crime, but let him be executed with the distinct understanding that he is a lunatic, deserving of punishment. To shut our eyes to his exact condition, and to try to flatter ourselves that he was of normally constituted mind when he shot the President, is not only cowardly, but it is impolitic. The conviction and execution will be without the force of an example upon hundreds of others of unsound minds who may be contemplating the commission of crimes. And it will lead to the erroneous conclusion that there was a sane man, a man in the full possession of his mental faculties, capable of killing the President of the United States for the purpose of uniting the two wings of the Republican party when both never failed to show their contempt for the assassin. Was there ever a more insane motive than this? and was there ever a man whose whole career, from childhood to the present day, has afforded a more striking example of that form of mental derangement called reasoning mania?"

My own opinion is that it may sometimes be proper and even necessary to punish criminals who are the victims of some of the forms of partial insanity; but it is in such cases above all

* *The Journal of Nervous and Mental Disease*, January, 1882.

others that justice should be tempered with mercy. The punishment should be in the form of seclusion or sequestration with the view of protecting society.

One scientific gentleman expressed himself to me on this subject by saying that he did not see any reason why we should not kill such people as Guiteau just as we would a rattlesnake, or a mad dog, or any other animal whose continuing to live would be a source of danger to the community.

With such views I certainly cannot accord.

Capital punishment in the case of insane criminals probably does more harm than good. If, as seems probable, Guiteau should go to the gallows with the air of a hero and martyr, his example, instead of deterring, will be more likely to incite other insane criminals to deeds of violence and blood.

In cases of homicidal insanity the law might be so framed as to made imprisonment in criminal lunatic asylums for a definite number of years compulsory, and also to put it within the power of the court and juries to make this imprisonment for life.

With reference to this subject of punishment Maudsley* speaks as follows: "It will be observed that I have spoken of the punishment of death as one which should never be inflicted upon an insane person; it is another question whether such a person should not be otherwise punished under any circumstances. Abolish capital punishment and the dispute between lawyers and doctors ceases to be of practical importance. There can be no doubt that the insane inmates of asylums are to some extent deterred from doing wrong and stimulated to exercise self-control by the fear of what they may suffer in the way of loss of indulgence or of the infliction of a closer restraint if they yield to their violent propensities. But it is equally certain that these motives can only be acted upon in a very cautious way, and that if the strain put upon them be too great the patient is made worse and all control over him lost. It is certain, too, that a patient who may one day be amenable to such motives may on another day, in consequence of a different phase in his disease, be altogether beyond the reach of moral influence. I do not see, therefore, how it can justly be maintained that an insane person should be subjected to any sort of

* *Responsibility in Mental Disease.* By Henry Maudsley, M.D. London, 1874.

punishment to the same degree as a sane person, or how it can be justly argued that he should in any case be under penal rather than under medical control."

Our laws with reference to the confinement in asylums of criminals acquitted on the ground of insanity should be modified so as to better meet the requirements of justice in special cases.

As the laws of Pennsylvania now stand, any criminal acquitted on the ground of insanity, may, after a confinement of three months, be unconditionally discharged by a judge, if the paroxysm of insanity in which the criminal act was committed was the first and only one which he had experienced. If it appears that such paroxysm was preceded by at least one other, then the court may, in its discretion, appoint a guardian of his person, and to him commit the care of the prisoner, said guardian giving bonds for any damage his ward may commit: Provided always, That in case of homicide or attempted homicide the prisoner shall not be discharged unless in the unanimous opinion of the superintendent and the managers of the hospital, and the court before which he or she was tried, he or she has recovered and is safe to be at large. (Act April 20, 1869, Section 5, P. L. 79.)

The experience of the country with reference to a case like that of Guiteau cannot fail to forcibly show forth the great neglect of society to properly guard individuals against criminal lunatics of a certain class. This class is made up of those who, in the expressive language of the street and newspaper, are known as "cranks." While the right of both the sane and the insane to liberty should be carefully guarded, the right of the sane to protection from the insane should be provided for with at least an equal amount of care.

I am fully in accord with the sentiment expressed by Maudsley when he says, "The true principle to guide our practice should be this,—that no one, sane or insane, should ever be entirely deprived of his liberty, unless for his own protection or for the protection of society;" but, on the other hand, in the carrying out of this principle, the most scrupulous care should be taken that safety is not sacrificed to liberty. Society has also its responsibility, both to itself as a whole and to its component parts, the individual members of the community.

Too many cranks and lunatics are loose in the land. At a

recent meeting of the "National Association for the Protection of the Insane and the Prevention of Insanity," held in New York City, January 20, 1882, Dr. C. L. Dana read a paper on "The Asylum Superintendents on the Needs of the Insane, with Statistics of Insanity in the United States."*

Dr. Dana presents a table in which he shows that we had in 1880 in the United States, in round numbers, 89,000 (to 96,000) insane, which gives a ratio of 1–570 (1–520) of the population. "In 1881 we had 74 State and 14 large private asylums, with a capacity approximately for 31,900, but holding 39,145. At a very low estimate, therefore, our asylums are overcrowded to the extent of 10,000 patients, while there are about 50,000 who are not in any asylums at all.

"The ratio of asylum to non-asylum population is thus nearly 4 to 5. It has usually been considered just the reverse, or 5 to 4."

Dana gives the following table showing the per cent. of persons who have no asylum accommodations in some of the larger States:

New York,	40 per cent.
Illinois,	55 "
Indiana,	50 "
Iowa,	66 "
Kansas,	80 "
West Virginia,	50 "
Texas,	80 "
South Carolina,	60 "
Mississippi,	70 "
Arkansas,	100 "
Missouri,	75 "
New Jersey,	55 "

This table needs no comment; it speaks for itself.

Society, then, is to blame in failing to make sufficient provision for the idiotic, imbecile, and insane, and in not providing by special enactments and the cultivation of a proper public feeling for the separation of individuals, dangerous by reason of lunacy or half-lunacy, from the rest of the community.

Some of our learned judges are not without blame for this state of affairs. The decidedly antagonistic stand which they

* Since published in the *Journal of Nervous and Mental Disease*, April, 1882.

seem over prone to take against reputable physicians in *habeas corpus*, and other cases, in which questions of medical opinion are at stake, has put the profession into such a frame of mind, that in Philadelphia—and I doubt not that it may be the same throughout the country—many physicians now refuse altogether to make affidavit in cases of insanity. A spirit of caution, which borders almost upon pusillanimity, has been engendered.

A case in point recently fell under my own observation. A gentleman of high standing in the community, who had at times during several months given slight evidences of mental derangement, was suddenly attacked with mania. He was noisy and excitable, and knocked down one of his most intimate personal friends. At the time of this attack he was boarding at a hotel. Two well known physicians were called in to see him, and advised in regard to his case. One of them was a surgeon to one of our largest general hospitals, and as the patient could not be cared for properly where he was, they at once sent him to this hospital. After admission to the hospital he gave striking evidences of mania, among other things complaining of persecution, and assaulting one of his attendants. Although the hospital authorities and physicians were anxious to get rid of him, as not a suitable case for the hospital, yet not one of the latter was willing to make affidavit as to his insanity, each giving as a reason that he might not be able to prove to the satisfaction of a Philadelphia judge that the man was insane. Eventually he was removed from the hospital to a private house, where he was guarded and cared for by special attendants; until finally, after several other violent outbreaks, he was sent to an asylum.

No reasonable doubt ever existed as to this patient's insanity. I saw him in consultation with the family physician of one of his friends, who had been called in to examine and care for him professionally, and after a second visit expressed my willingness to sign a certificate of insanity. The member of the hospital staff under whose care he had been placed was also convinced in his own mind of his insanity, but he perhaps, under the circumstances, very properly waited for some evidence or manifestation of insanity that would satisfy a learned judiciary. If the patient had supposed that he was made of glass, that his nose was a club, or that he was the Emperor of

Siam, no trouble would have been experienced in securing a certificate.

Mistaken pride often leads a family to cover any facts which tend to show the existence of mental derangement in any of its members, even in some instances, when the insane tendencies are of such a character as to endanger property, limb, or life.

I have no doubt that many members of this society can furnish illustrations from their own experience. I could supply many such illustrations. A widow had living with her, to assist in the management and working of her property, several grown up sons. One of these had for a long time been peculiar—at times sullen, taciturn, and irritable, never caring to mix much with the rest of the family, and quarrelling when opposed or thwarted. On one occasion, without any sufficient provocation, he knocked down one of his brothers. On another, after he had been talking pleasantly with the brother for some time, he quietly left the room, and, in a few minutes, rushed back again with an axe in his hand to assault the brother, who only escaped by a rapid and dexterous flight. This man is still at liberty; and not only so, but he is also in almost daily association with his family, almost every member of which he has, at one time or another, threatened.

A second case, from my own experience, is that of a young man, in whose family insanity has been known, but who himself showed no evidences of insane taint until after he had grown to manhood. Suddenly one day he took hold of a young lady and attempted to injure her, giving as a reason that he did not care to have her associate with a certain young man. He had never had the slightest relations of intimacy with this lady. On several other occasions he attempted violently to force his company upon her, and having still later again assaulted her and a gentleman with whom she was walking, he was arrested and placed under bonds to keep the peace. These incidents date back several years. Several times since he has assaulted other ladies and their friends, seemingly instigated by ungovernable jealousy alone, never having attempted to commit indecent assaults. His habits have changed. He has not done any work for years, since the first outbreak to which I have alluded. This man also is at liberty. He is about half his time under bonds to keep the

peace, but has never been placed, where he undoubtedly should be, in an insane hospital.

The following is a third instance bearing upon the same point. A man possessed of some property and of some business capacity, lives neighbor to the superintendent of one of our largest philanthropic institutions. Some question as to the boundary line between this man's farm and the property of the institution arose, but he would never permit it to come into position for settlement by law or arbitration. Time and again, however, he has menaced both the superintendent and those employed by him, on one occasion even threatening, with gun in hand, to shoot those who, according to his own erroneous opinion, were trespassing across his line. In fact, most of this man's time is spent in efforts to make his neighbors miserable.

In concluding these reflections on criminal lunacy, let me say that I believe that the founding of special criminal lunatic asylums would be a step in the right direction. This subject is one that has attracted considerable attention from alienists and criminalists, both in this country and abroad.

The Board of Public Charities of this State have several times appealed to the Legislature to provide suitable arrangements for the custody and treatment of the criminal insane, either in a separate building, or in a department of one of our State hospitals.

The Board requested the Legislature to pass a law directing the construction of a wing or separate department at the hospital at Danville for their reception, and a similar application was made subsequently to the authorities of the Warren Hospital, neither of which was favorably received.*

In the last report of the Board the recommendation is renewed "that a separate wing or a department of one of the State hospitals, to be under the charge of its superintendent, shall be suitably constructed, arranged, and equipped for the reception, custody, and proper medical treatment (1) of those persons who continue insane after completing the period of their sentence for crime; (2) of those who being charged with the commission of crime while sane, are adjudged insane before trial or sentence; (3) of those who are acquitted of certain

* Twelfth Annual Report of the Board of Commissioners of Public Charities of the State of Pennsylvania, 1882.

crimes, as murder, arson, rape, burglary, &c., on the ground of insanity, and are adjudged too dangerous to be discharged, and (4) perhaps of other dangerous lunatics; all of these to be sent either to this department or to the ordinary hospitals, according to the discretion of the courts or of the proper commission, and all other insane persons who are brought up for the sentence of the courts, to be sent to the ordinary hospital; (5) *that until an entirely separate hospital may be provided for their accommodation insane convicts shall be admitted to appropriate quarters in the above mentioned special department.* Their insanity to be ascertained and their transfer to be regulated according to provisions of law, and they themselves to be allowed as little association with the other inmates of this department as the superintendent of the hospital shall judge proper and expedient."

Nowhere have I seen the objections to mingling criminal lunatics with insane patients of other classes better summarized than in a report of the English Commissioners in Lunacy, published as long ago as 1853, and quoted by Dr. Nicolson,* to whose able papers I have already referred:

"1. That such association is unjust, and that it gives pain and offense to ordinary patients (who are generally very sensitive to any supposed degradation) and also to their friends.

"2. That its moral effect is bad, the language and habits of criminal patients being generally offensive, and their propensities being almost invariably bad. That in cases of simulated insanity (which seem to be not unfrequent) the patient is generally of the worst character, and that even where the patient is actually insane, the insanity has been often caused by vicious habits. That patients of this class frequently attempt to escape and cause insubordination and dissatisfation amongst the other patients.

"3. That a necessity for stricter custody exists for the one class than for the other, and that this interferes with proper discipline, classification, and general treatment, and strengthens the common delusion that an asylum is a prison.

"4. That criminal patients concentrate attention on themselves, and deprive the other patients of their due share of care from the attendants.

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* *Journal of Mental Science*, July, 1877.

"5. That the effect on criminal patients themselves is bad; that they are taunted by the other patients, and are irritated on seeing such other patients discharged."

From the same article I learn that in England, with reference to the method of providing for criminal lunatics four periods can be made out, as follows: *First*, period of penal association with prisoners in gaols, up to the end of eighteenth century; *second*, period of treatment as ordinary lunatics in asylums—1800–1840; *third*, period in which various attempts, by means of classification and special plans of separation were made to prevent indiscriminate association of the vicious and criminal classes of the insane with other insane patients; *fourth*, the Broadmoor or centralization period, which is the present method of disposal. This method, after fair trial, has met with the approval of the most prominent English alienists.

Few institutions of this kind are in existence in this country. At Auburn, New York, is a Criminal Insane Asylum, and in Missouri and Illinois others are building. Steps are now being taken in Massachusetts to provide for separating insane criminals from the other insane. The State of Pennsylvania has no asylum of this character. The insane of the vicious and the criminal insane, whether tried or untried, convicted or unconvicted, are the inmates of the same asylums with the harmless, the innocent, and the refined; not infrequently the latter are the enforced companions of the former.

These questions of criminal responsibility and criminal lunacy should be discussed from a high plane. Neither passion, prejudice, nor public clamor should influence us in coming to a decision upon their merits.

ADDRESS IN HYGIENE.

By W. F. MUHLENBERG, M.D.,

READING.

Germs.

The science of medicine, like its sister sciences, has been eminently progressive in its character. Each new advance has contributed to the removal of disease, the diminution of human suffering, the prolongation of life, and the increase of the happiness of mankind; and we may reasonably hope from the past history and present condition of medicine, for a like progress in the future. Our knowledge of disease and its removal has not yet reached perfection, and as long as this is not the case, there is ample room for continued investigation. In harmony with this view, I have selected for the present occasion the subject of microgerms. It is true our knowledge of these germs is yet in its infancy, and we cannot accurately estimate their importance in producing disease; yet the subject is one of such great extent, and seems to be so intimately connected with the manifestations of disease in the human system, that it has appeared to me advisable and useful to present some of the many interesting facts and observations with reference to these germs, and the proper methods to be pursued in propagating and preserving them. This seems to be the more necessary because the knowledge of them is not easy of access, often being of a fragmentary character, and scattered in many publications.

The only work, so far as my knowledge extends, to be found in this country on the subject of bacteria or germs, is a translation by Dr. Sternberg, U. S. A., of a French treatise on the

subject, by Dr. Magnin, and to this especially we refer all those who are interested in the study of these germs in their botanical peculiarities.

Before proceeding farther, we may remark that every physician of the present day ought to possess a microscope; for by following the methods of examination heretofore proved to be scientifically accurate, or discovering new scientific processes of investigation, he may succeed in solving problems which hitherto have escaped solution; or find out new facts, which may be of incalculable benefit to the human race. The researches of Pasteur, it is said, have been of more service to France than the milliards paid to Germany. The possibility that some of our infectious diseases, by a process of vaccination, may be rendered harmless, is sufficient to attract workers in that direction; and though the results thus far may seem to be insignificant, they ought not to be discouraged by the sneers of others, but patiently continue their labors, with the hope of ultimately obtaining more accurate knowledge upon the subject.

The only direct test for germs is the peroxide of hydrogen, $H_2\ O_2$, but as it is decomposed into oxygen and water by numerous metals, and also by the red blood-corpuscles, it is of an unreliable character. The products of the fermentation, degeneration, and putrefaction of germs, such as ammonia, sulphuretted hydrogen, leucin, tyrosin, indol, phenol, skatol, cresol, and paracresol, phenylpropionic and phenylacetic acids, can be more readily detected. The pancreatic fermentation decomposes albumen into leucin, tyrosin, and similar bodies; but indol, skatol, phenol, and cresol are ordinarily found only in the large intestine. The coats of the large intestine seem to be endowed with a greater capability of resistance to germs and their products; and while these bodies appear to be unable to enter the system through the lower bowel, the marks of their entrance in the shape of ulcers and colonies are always found in the small intestines, particularly near the ileo-cæcal valve. Sulphuretted hydrogen, (1) always present in the large intestine, in larger or smaller quantities, has been proved to have passed through the coats of the small intestine, and to have been excreted by the kidneys, thus showing that the products of decomposition can only enter the system through the upper portions of the bowel. The excretions of the intestinal anal

of new-born infants do not contain indol and skatol, and, as has been frequently proved, no germs.*

All these products (2) appear to be removed from the system as so-called ethylsulphuric acids. Phenol, in addition to a number of intermediary products, seems to be derived from tyrosin, or most probably, comes off as a paracresol. Indol, C_8H_7N melting at 52°C., and skatol, either C_9H_9N or $C_{10}H_{11}N_1$ viewed as a methyl-indol, and melting at 95°C., are two of the most important products of albuminous decomposition, as their presence almost invariably indicates germs.

The presence of skatol with indol changes somewhat the result of the ordinary test for indican in the urine, (it is necessary to add to the urine an equal quantity of hydrochloric acid, and of a saturated solution of chloride of lime or chlorinated soda) for, if indol alone is present, the fluid becomes green or blue, but if skatol is in excess it becomes violet or red. Indol passes over into the urine as the indoxysulphate of potassium. There is a marked increase of indol in dyspepsia, gastro-duodenitis, chronic constipation, intussusception, diarrhœa, cholera and typhoid fever, while phenol is apparently increased in peritonitis and miliary tuberculosis.

Jaffe found that the tying of the small intestine caused an increase of indican in the urine, and the same result was produced by prolonged and exclusive meat diet. Skatol gives with dilute nitric acid a pale violet color, and with fuming nitric acid

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*The tests for leucin, $C_6\ H_{13}\ NO_2$, are as follows:—If a fluid suspected of containing it is evaporated in a platinum dish, with a small quantity of nitric acid, there will be left a colorless, almost invisible residue, which, when heated with a little caustic soda, becomes yellow or brown, as the leucin happens to be pure or impure; and on farther concentration, changes to oily-like drops, which move freely around the dish without adhering. (Scherer's test). When this substance is dissolved in a boiling solution of lead-acetate, on the addition of ammonia to the cooled solution there will be a separation of shining laminæ, consisting of a mixture of leucin and plumbic-oxide, from which the leucin can subsequently be sublimed in wooly masses. The tests for tyrosin, $C_9\ H_{11}\ NO_3$, are as follows:—Add to the suspected fluid, diluted with some water, a solution of the acid nitrate of mercury, then boil for some time; if tyrosin is present, the solution at first will exhibit a beautiful rose-red color, and, subsequently, a red precipitate (Hoffmann's test); or, pour a few drops of concentrated sulphuric acid upon the fluid, heat it moderately, when it will dissolve with a faint red color. If water and barium carbonate be added until effervescence ceases, on evaporation and filtration the addition of a few drops of a neutral solution of ferric-chloride will give rise to a violet color (Piria's test).

a red flocculent precipitate (Nencki's test). Skatol (3), besides, is less soluble in water, and is not discolored by the addition of chlorine water. Dr. Wernich (4), who has made a special study of these products of albuminous decomposition, lays down two general principles: Firstly, "That the bacteria themselves prepare the conditions for their destruction," and, secondly, "that very slight quantities of the poisons so generated protect against infection by new organisms of the same variety; and he believes that these germs cease to increase, not on account of a deficiency of nutriment or oxygen, (although many germs are anærobiotic), but because of the generation of some bodies of this kind, which occasion antisepsis instead of putrefaction. The fact that the products of the decomposition of germs, artificially cultivated, do not smell of indol or skatol (so-called from the Greek word *σκῶς*, gen. *σκῶτός*, *fæces*) proves almost conclusively our inability as yet to solve the life problems of these germs, nevertheless it does seem remarkable that a body like carbolic acid, one of our best antiseptics, should be a natural product of the decomposition of albuminous bodies in the intestines. Phenylpropionic acid, ($C_6H_5CH_2CH_2COOH$), and phenylacetic acid ($C_6H_5CH_2COOH$), bodies analogous to benzoic acid, but as yet insufficiently known, and phenol and cresol, two bodies well known, complete the list of bodies resulting from the decomposition of germs. The various appliances used in the microscopical examinations should be in a state of absolute cleanliness on account of germs in the various fluids used, and from the constant presence of spores in the air. Micrococci and bacteria (5) have been found even in a 2 p. c. solution of carbolic acid, as well as in distilled water and various hypodermic solutions, but cannot be found in perfectly fresh solutions of carbolic acid, which seems to lose its efficacy as an antiseptic after exposure to the air. From experiments at Montsouris in France (Miquel *l. c.*), it was shown that during the warm months there was an average of 28 spores in each litre of air, while during the winter months very few could be found. On the contrary, after a long continued rainfall nearly one hundred spores were found in each litre, and the air in rooms was always more deficient in them than that outside. Distilled water which has been thoroughly boiled, should be used in all the investigations. All the glassware should first be cleansed with some strong acid (sulphuric acid and bichromate of potash solu-

tion answering very well), then well washed with distilled water, and subsequently purified with absolute alcohol, the remains of which should be burnt out, or the glass passed through the flame of a Bunsen burner. Any metallic instruments used for applying a deposit on a slide, or for other purposes, should be passed through a flame, and where possible, used in a heated condition. Keeping the various instruments for some time in a hot-air bath, or an incubator, at a temperature of 100°–140° C., will be found almost necessary. After the culture-fluids have been prepared and sterilized, a compact wad of cotton, which has been heated to 130° or 140° C., will serve to cover the test-tubes and prevent the access of spores. It is not necessary, and in fact it is disadvantageous to carbolize such wads, as the presence of carbolic acid may prevent the germs from growing. Germs may be confounded with blood corpuscles, fat globules, epithelial cells and their nuclei, leucocytes, mycelial threads, vibrios, coagulated fibrin, granular crystalline deposits, granules of casein, particles of fibres, wood, feathers, and the like, air globules, and if not speculative, the small granules spoken of by Howlett (6), which 2.5 to 4 m. long, arrange themselves in racemes, and can be stained with methyl-violet. Forms (7) whose thickness does not exceed 1 m., cannot in general be distinguished from inorganic bodies of like size and form. As germs have only a single refraction, crystalline bodies which have a double refraction, may be recognized by the polariscope. If granules possess continuous motion, particularly in a straight or curved line, they are certainly schizomycetes or monads, while molecular motion gives no positive decision. If the granules arrange themselves in pairs, triplets, or chains, and particularly if they show a true spherical or oval form they are organized.

If bacilli seem to be present, and if they present a knee-shaped curvature, they are also organized. "In zoogloœa forms (8) the micrococci of an individual zoogloœa mass are always uniformly of one size, and, are always at the same distance from one another, in contradistinction to albuminous and fat molecules." Fat and most other molecules are soluble in alcohol, liquor potassæ, ether, strong acids and alkalies. Pus and epithelium are dissolved by caustic potash, while inorganic and many organic bodies are destroyed by the strong acids. The granular mass (9) is insoluble in acetic and hydrochloric

acids, caustic potash, glycerine, chloroform, and oil of cloves. Ammonia makes germs more colorless, but dissolves pus, while liquor potassæ with a subsequent addition of iodine, colors the germs brown. Cultivation is the best mode of purifying and distinguishing the germs. Germs are best examined by the dry method (10), which consists in allowing a thin layer of the fluid containing them to dry on a slide under a cover glass, and subsequently softening and staining them for examination. The substance should be spread in a thin layer, so that greater or less interspaces lie between the objects, and then allowed to dry under cover, so as to prevent the admixture of other spores. Such dried slides can be preserved for months under a bell-glass. Water and glycerine loosen the germs from the glass, but absolute alcohol and a $\frac{1}{2}$ p. c. solution of chromic acid renders them insoluble, but hardens them so much that they often lose their natural form. Acetate of potash one pint, aqua two pints, causes them to swell up without separating them from the glass, and, although it makes them paler, does not change them. In some cases it is better to take the fluid for examination from the top of the culture tube, in others from the bottom, where are usually found the permanent (resting) spores. In the examination of fresh bodies or liquids like urine, it is recommended to add carbolic acid or thymol to the fluid to collect the sediment, and after the addition of a few drops of a $\frac{1}{2}$ p. c. solution of caustic potash to stain. A solution of osmic acid (1 : 100) serves to harden the mass of filmy bacteria found on the surface of a liquid and surrounded by a zoogloœa mass. A strong solution of iodine (2-5 p. c.) stains them a yellowish brown; united with sulphuric acid it gives some of them a blue color. All the different aniline dyes, eosin, fuchsin, saffron, Bismarck-brown, methyl-blue, green, and violet are well suited for staining. Methyl-blue and violet, whether used in strong or weak solutions, seem to have the strongest affinity for germs. Aniline brown is best for photography, but as it is rendered colorless by acetate of potash, germs must be preserved in glycerine and water. While tube-casts are also stained blue by methyl-blue, the staining is not so deep as with the germs. Hæmatoxylin preparations, after thorough washing, can be mounted in glycerine or a solution of chloride of calcium. Glycerine and acetic acid stains them a yellow-brown. They are stained red by carmine, hydrochloric acid

and glycerine, and brown by carmine, if subsequently they are treated with the tincture of the chloride of iron. The acid preparations of the anilines where the coloring principle seems to lie in the acid, like the picrates, do not stain them. The anilines have the further advantage that they soften the germs without loosening them from the glass, unless too weak a solution is used. A concentrated solution of sulphate or acetate of calcium (1 : 2) can also be used to preserve them, after they have been stained by methyl violet. In examining animal tissues it is proper to harden them in alcohol, make the sections, and stain in the usual manner. After the tissues have been stained, a weak solution of carbonate of potash will decolorize all the animal tissue without affecting the germs.

There are four fundamental forms:* spheroid or spherobacteria, rod-shaped or microbacteria, thread-like or desmobacteria, and spiral or spirobacteria.† The reaction with iodine and sulphuric acid, proving the presence of cellulose, shows them to be of vegetable origin. Often undistinguishable microscopically, they can be differentiated best by their mode of growth on solid substances. As germane with the scope of this address, we present a short description of the more important supposed pathogenic germs. The bacilli malariæ (12) "are small rods, 5-10. m. long, which during their evolution become converted into tortuous filaments, which divide into joints, by the formation of clear spaces in the protoplasm, or by means of separating membranes. The filaments produce spores on the surfaces exposed to the air, and spores are developed in the interior. The spores are situated in the centre or towards the extremities of the joints, but may be found in both places at the same time." For their growth they require oxygen, a temperature of 20° C., moderate but steady humidity,

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* Klebs (l. c.) divides the pathogenic germs into two classes: the monadina and the microsporina. The granules of the monadina are larger, and lie imbedded in a sort of jelly, which forms a clear zone around every granule. The granules themselves are arranged in parallel rows, and the brown color of septic micrococci is lacking. They are less stained by the anilines. Septic processes, like diphtheria, are produced by the microsporina. The monadina bring on inflammatory processes, attended with the formation of connective tissue, such as the acute exanthemata, and rheumatic, nephritic, hepatic, and cardiac inflammations.

† The coccobacteria (11) are micrococci which are capable of transforming themselves into short rods, and form groups united by zoogloœa, while by prolongation of the cocci, rods are formed, which break up into chains by segmentation.

and the direct action of the sun. In the body they are only found in the cold stage of the fever (by aspiration of the spleen).*

The bacillus anthracis is found in translucent filaments more or less segmented. At the end of forty-eight hours in culture-fluids it shows germs distributed in series along the filaments. There is a connection of gelatinous matter which is absorbed, and eventually the germ drops off, being reduced to so-called germ-dust, which can be cultivated after lying dormant for years. The bacilli of putrescent blood (13) are rounded at the ends, while the bacilli anthracis are perfectly square at the same place. The micrococcus diphtheriæ is a minute spheroid, found particularly in the mucous and submucous tissues, and the lymph channels. It is (14) 1–1½ m. long, and 3 m. broad in the deeper portions, and 4 m. long, and 1.1 m. broad in the superficial areas. They are generally associated in pairs, more rarely in chains, but frequently in colonies, in which the gelatinous can be cleared up by acetic acid. Their products seem to be fatal to themselves, as in cases of convalescent diphtheria very few can be found, but in their place bacilli, septothrix, and the bacteria of putrefaction. The presence of rod-bacteria (8) in dipththeritic membrane is proof that it has commenced to putrefy.† The bacillus typhi, 80 m. long and 5 m. broad, found mainly in the lymphatic organs of the abdomen (intestinal-mucous membrane-glands and spleen), is more slender than the ordinary bacteria of putrefaction (16), has permanent spores (17), and takes staining less distinctly.‡ It is not found in the intestine when there is even a tuberculous ulceration.§

* In the examination for this germ, the air taken directly from over the surface of the ground was drawn through an aeroscope of peculiar construction, which allowed the deposition of all filaments and spores upon a glass plate covered with gelatine and glycerine.

† It consists (15) of long-jointed mycelial rods, and spores of two kinds; the one, oval or round, giving rise by a gradual process of elongation to the mycelium; the other rectangular, and showing after a time, minute brilliant spores in their interior, about the size of an ordinary micrococcus.

‡ Wernich (l. c.) denies *in toto* these specific criteria of the bacillus typhi, and believes that the ordinary bacteria of the intestinal canal, by a process of ascent into the small intestines, find circumstances more suited to their propagation, and then produce typhoid fever.

§ There is no doubt (18) that the bacilli typhi are present in every typhous plaque of the intestines, as long as there is a process of development of the disease. They appear to reach the height of their development in fourteen days, and then undergo retrograde metamorphosis, after necrosis and ulceration, or degeneration of the cells, has taken place.

The spirochæte Obermeieri (19) is a non-extensible, flexible filament found in the blood of relapsing fever patients only during the pyrexia, but is never found in the urine. On the contrary, the urine is full of micrococci during the remission. It can live (20) fourteen days at 22° C., fifteen hours at 38° C., and only 4 hours at 40° C.

If an albuminous or saccharine fluid is exposed to a high temperature, and the entrance of spores carefully excluded, it will remain perfectly unchanged; but if we add to it some putrefying substance, or some of the bacilli anthracis, we will find a decomposition, apparently identical in both cases, except as regards the microscopical examination, and the result of the decomposition; for, in the former case, the smell of putrefaction will manifest itself, while in the other only ammonia will be noticed. The innocent micrococcus (21), ordinarily found in the mouth, has been transformed by cultivation into a variety of germ, which speedily kills the animal inoculated (by septicæmia). The ordinary hay-bacillus (22), by cultivation in egg-albumen, and then in blood-serum, has been transformed into the bacillus anthracis; but this has been strenuously denied (Koch, *l. c.*), and even if it were the case, it must be proved that the same transformation can take place in the body. Air and moisture seem better for cultivation, and an incubator, or hot-air bath, is almost a necessity. After tubes have been sterilized, it is well to stand some aside for control-experiments, so as to be thoroughly convinced that whatever was added brought on opacity and decomposition of the culture-fluid. Mechanical disturbances (23) and electricity interfere with the growth of germs in culture-fluids. The germ of chicken cholera (24), reaching only a slight development in sterilized urine, and destroyed in yeast solution, is cultivated most successfully in chicken broth at a temperature of 25°–35° C., and can be attenuated by allowing an interval to elapse between successive cultivations, and by cultivating at a temperature of 40°–45° C. The micrococci of wounds (25) do not produce putrefaction in culture-fluids, and develop best when removed from the air. The micrococci of diphtheria, which multiply best at 40° C., and are arrested in their movements by a temperature of 70° C., do not need a large supply of oxygen, and are generally found at the bottom of a culture-tube, while the bacilli are at the top. The animal organism (14) appears to be the best culture medium

The bacterium termo (26), killed by heating for several hours to 50° C., slowly increases even at 5° or 6°C., but, like the micrococcus prodigiosus (27) (in quantity of a blood-red color), develops best at 30°–35° C.

Blood-serum is not a good medium for cultivating the bacillus septicæmiæ, which will not grow in the mucus of a healthy urethra (Lister, *l. c.*), but develops best in a hay infusion, while the bacillus anthracis will not grow in a hay infusion, but develops best in blood or aqueous humor. In all experiments it is advisable to use the second or third cultivation, to prevent the admixture of other spores, and to develop the germs in the most favorable way. As nearly all the bacteria contain sulphur, some little can be used in the culture-fluids.

Sterilized bouillon, chicken or meat extract, ascitic fluid,* aqueous humor, egg-albumen, blood-serum, and hay infusion are some of the substances used for culture-fluids.

Among the artificial fluids are :—

Pasteur's: gm.		Cohn's : gm.		Knop's: gm.	
Distilled water,	100	Phosphate of potash,	1	Phosphate of potash,	1
Sugar,	10	Sulphate of magnesia,	1	Sulphate of magnesia,	1
Tart. of ammonia,	1	Tribasic phosph. of lime,	01	Nitrate or chloride of lime,	2
Ashes of 1 gm. of yeast,	075	Tartrate of ammonia,	2	Water enough to make c.c. xx.	
		Water enough to make c.c. xx			

Bucholtz replaces the yeast in Pasteur's solution by $\frac{1}{2}$ gm. of phosphate of potash. Gelatine (28), added to culture fluids, in a proportion of 3-4 p. c., furnishes a good substance for solid cultivation, although potatoes, first boiled, then sliced, are the best medium for the dry cultivation, which appears to be the best mode of discriminating germs with the naked eye. The only way of sterilizing fluids is by heat, and for this purpose dry is better than moist heat. A temperature of 70° C. is generally sufficient to kill all bacteria, but it requires a prolonged exposure at 128° C., or even higher, to kill the spores.† Very low temperature, even as low as—40° C. (Frisch *l. c.*), fail to kill

* The ascitic fluid from a case of two years' standing, however, proved to be antiseptic, and prevented the growth of germs, on account of the phenol and indol it contained (Salkowski, *l. c.*).

† Passing (29) the motes seen in the air through marble moistened with potash, and glass wet with sulphuric acid, and through a variety of ethers and alcohols, did not sterilize, though they were destroyed by their transmission through a flame

the spores. In judging of the diseases produced by inoculation with the so-called specific germs, we must be thoroughly convinced that the disease produced is the one sought for, and not septicæmia or a local tuberculosis.* Animals must be proved to be able to take a certain disease, which resembles in its symptomatology that affecting man, and everything tending to interfere with or obscure a precise diagnosis must be excluded. Animals vary much more in their temperature than man, and the effect of slight injuries, or even fright (particularly in rabbits), is very marked.†

If an organism be generated successively in any medium for a long period, it must become habituated to it, and on its transference to another medium will require time to rehabituate itself. Its virulence may be interrupted by cultivation in the body (inoculation). The supposed conversion of bacilli may be due to the fact that, as two media are ordinarily used, in the first the one organism was too subordinate to be noticed, whereas the second medium, uniting its necessities much better, may cause it to grow so vigorously as to crowd out and displace the bacillus predominate in the first medium. Pasteur's solution becomes milky, Cohn's moderately cloudy, and fresh urine slightly tinged, while a 2 p. c. solution of carbolic acid shows no effect, if, under like conditions, one drop of putrid fluid be added to each. The bacillus subtilis grows in its original medium to double its length, without changing its diameter, and then breaks into two rods, but on the addition of sugar or serum to the fluid, forms filaments, instead of dividing. The

* Tuberculosis is now generally considered to be inoculable in animals, even in the shape of phthisical pus (30), and perhaps, as Rindfleisch suggests, the reason why many previous attempts at inoculation have failed, is because we are all hereditarily habituated, more or less, to the poison; but, even if micrococci are the vehicles of transportation, it is possible for them to be carried off by the blood sufficiently rapidly to do no harm.

† In the septicæmia of rabbits, immediately after inoculation, there is a rise of temperature of 2°-3° C., while before death, it falls below the normal standard. There is also, loss of appetite, debility, diffuse cellulitis, and occasionally a purulent collection near the puncture, while the subcutaneous connective tissue is full of bloody serum and micrococci. In judging of the bacillus malariæ three factors were considered necessary to prove intermittent fever in rabbits. 1st. Distinct intermittent feverish attacks. 2d. Enlargement of the spleen, firm, but not soft, as in septic spleen. 3d. Absence of marked diminution of the animal's weight, and the existence of black pigment in the spleen, blood, and marrow (due probably, to a liberation of iron from the hæmaglobin), as well as, *post mortem*, absence of pus.

development of germs appears to depend on the fluid and mode of culture used. In one case (31), no permanent spores are found; in another no zooglœa mass. The micrococcus prodigiosus, grown on potatoes, is crowded out by a bacterium like the bacterium termo. Blue cocci, cultivated in Pasteur's solution, become colorless, but, on admixture with pus, become blue; while planted on potatoes, become red.

Septicæmia in mice (28) is always produced by the smallest drop of a culture fluid containing the micrococcus, while in rabbits the same fluid produces an erysipelatous gangrene of the ear, with colonies of rosary-like micrococci, which can be cultivated in field mice, although they are insusceptible to the bacillus anthracis. Klebs (32), one of the great authorities on mycology, considers the bacillus anthracis the cause of charbon, and the bacillus malariæ, bacillus typhi exanthematici, and the bacillus typhi abdominalis,* the best examples of so-called specific germs, and views them as pathognomonic. While all acute abscesses (25) are full of micrococci, none are found in cold abscesses. There is only a serous discharge where no micrococci are present in wounds. Pathogenic bacteria must enter the system in certain numbers in order to survive or become virulent, for if (35) the vitality of a rabbit is lowered by the administration of phosphorus, micrococci, which under other circumstances do no harm, increase so rapidly as to be fatal. It is believed (36) that a septic nephritis is frequently produced by the direct entrance of micrococci into the kidneys. In the neighborhood where these colonies of micrococci are found a violent inflammatory action can be observed, while the signs of a diffused nephritis are present in the parenchyma. The micrococci seem to act as emboli, and are found in the small intertubular arteries.

Different facts, lately determined, render it probable that germs can traverse the glomeruli of the kidneys. The filtration of fat (37), and of the bacilli anthracis (38), from the blood, has been almost conclusively established; and, in addition, it has been shown (39) that the urine of healthy persons, if the access of air is prevented, contains no germs nor bacteria, remains

* The bacillus typhi (33) is found mainly in the enlarged lymphatics and spleen, while the bacillus of tubercular inflammation is found in the intestines. This same bacillus (34) has been found in drinking water, and appears to produce the same disease in rabbits.

acid, and does not undergo decomposition; while, on the other hand, in infectious diseases (40), like scarlatina and typhoid fever, they are often found in great quantities in the urine.* In places, robbed of their epithelium (14), micrococci quickly enter the lymphatics and blood-vessels, and are found in contact with the blood-, pus-, and plasma-cells, and (as seen after the injection of cinnabar) appear to enter bodily into them, destroy the membranes, and are excreted by the kidneys, or deposited on some mucous surface. Invading the body, as they do, germs either undergo a harmless transformation and perish, or, by some accident favoring their growth, like the effect of various culture-fluids upon them, more readily transmit their species, and, when produced in immense quantities, by robbing the tissues underlying them of some element necessary to their existence, bring on various disorders. The fact of the presence of germs in various parts of the body, and various excretions and secretions, furnishes as yet no reliable criterion of their previous action on the organism. The question that always presents itself is, whether we can recognize with certainty, from these residual organisms, the prior existence of some definite disease. It has been found that in frogs dying of septicæmia (Wassilieff, Strassburg Inst.), a development of germs takes place *post-mortem;* while in frogs not dying of septicæmia, none can be discovered *ante aut post-mortem.* Yet sections of cadavers of dogs (Billroth, *l. c.*) made instantly after death, and immediately plunged into mercury or paraffin, have always been found full of germs. Saliva (43), injected into rabbits, has produced septicæmia, but on cultivation it has been found full of germs. One general view seems to prevail, that septic affections arise without the presence of germs, and are produced by a substance

* Some interesting (41) cases of nephritic mycosis have been recently described, in which, *post-mortem*, were found tube-casts of a particular variety, so-called germ-casts (Pilz-cylinder). The tubes were found robbed of their epithelium, and colonies of micrococci were seen blocking up the tubules. These casts appeared to consist of a homogeneous vitreous basal-membrane, covered with micrococci. They were not produced by septicæmia, nor by ascent from the bladder. The symptoms of the disease were those of meningitis, but, *post-mortem*, no lesions were found in the brain. An acute nephritis (19) is often present with inflammatory affections of the tonsil, in which micrococci are found in great quantities in the urine. As one author says (42), it is not difficult to conceive that a mycelium-like growth of beaded filaments, like micrococci, might act destructively on the living membrane of the urinary passages. It seems probable that a septic ulcerous endocarditis has the same origin. Cf. Leyden, Frerich's and Leyden's *Zeitschrift*, Vol. IV., No. 3.

formed by putrefaction, to which poisonous properties are ascribed.

This view appears to be supported by the fact that frequently no considerable quantity of germs are found in the organism, but is untenable, because, as in relapsing and malarial fevers (also in filaria sickness) they may temporarily disappear and rarely all the fluids or organs of the body are examined, and by filtering such a septic fluid we can inoculate it with perfect safety, whereas the separated germs, cultivated even to the thirtieth or sixtieth generation in harmless fluids, and representing only a billionth part of any chemical or bioplastic virus always produce disease. The apparent conversion (?) of harmless germs into virulent ones also proves there is no chemical poison. Many authorities say surgical injuries of various kinds without external lesions have had, as a consequence, septicæmia, and that although germs have been found in the purulent or muco-purulent secretions they are either a *post-mortem* change or part of a process not injurious to the system. Some experiments appear to prove that the germs admitted to be omnipresent in the body, perhaps after such accidents find a nidus for their increase and peculiar action in the disorganized tissues. Ordinarily (44) after the subcutaneous castration of rams a simple withering or calcification of the testicle ensues, but if before castration an injection of a germ, containing fluid is made into the blood, gangrene of the testicle is invariably produced, except where all the vessels leading to the testicle have been ligated. The germs in the blood consequently seem to be few, and not to increase without some stimulus.

In the mouth are found normally; the septothrix pusilla, the septothrix buccalis, the spirochæte dentium, the penicillium microsporinum, and a micrococcus, which is colored blue by iodine. Normally (45) in the intestinal canal are found micrococci, the bacterium termo, the bacillus subtilis, and saccharomycetes, all stained yellow or brown by iodine, and the clostridium butyricum (Pasteur's vibrion butyrique), and a smaller variety, stained blue by iodine.

Iodoform (46) used now so largely as an antiseptic, exercises a constant antagonizing influence upon the germination of bacteria, and if used in quantity prevents the origin of putrefactive processes. Sunlight seems to have some slight effect upon the growth of germs (47) as turbidity did not take place in

culture tubes exposed to its influence until the third day, whereas ordinarily it was noticeable on the first day.

The following table (48) gives the antiseptic as well as aseptic action of various bodies on cultivated flesh-extract solutions:

ASEPTIC.		ANTISEPTIC.
1 : 25,250	Corrosive sublimate.	1 : 5,805
1 : 30,208	Chlorine.	1 : 22,768
1 : 11,135	Calcium hypochlorite.	1 : 3,720
1 : 6,448	Sulphurous acid.	1 : 2,009
1 : 6,308	Bromine.	1 : 2,550
1 : 5,704	Sulphuric acid.	1 : 2,020
1 : 5,020	Iodine.	1 : 1,548
1 : 4,268	Acetate of alumina.	1 : 427
1 : 3,353	Oil of mustard.	1 : 591
1 : 2,867	Benzoic acid.	1 : 410
1 : 2,860	Borosalicylate of soda.	1 : 72
1 : 2,005	Picric acid.	1 : 1,001
1 : 1,340	Thymol.	1 : 109
1 : 1,003	Salicylic acid.	1 : 60
1 : 1,001	Permanganate of potash.	1 : 150
1 : 669	Carbolic acid.	1 : 22
1 : 90	Chloroform.	1 : 112
1 : 62	Borax.	1 : 48
1 : 21	Alcohol.	1 : 4
1 : 14	Eucalyptol.	1 : 116

The following table (48), by another investigator, shows the antiseptic action of various bodies on the germination of bacteria in tobacco infusion:

Corrosive sublimate,	1 : 20,000	Sulphuric acid,	1 : 150	
Thymol,	1 : 2,000	Boracic acid,	1 : 133	
Sodium benzoate,	1 : 2,000	Sulphate of copper,	1 : 133	
Creosote,	1 : 1,000	Hydrochloric acid,	1 : 75	
Oil of thyme,	1 : 1,000	Sulphate of zinc,	1 : 50	
Oil of caraway,	1 : 1,000	Alcohol,	1 : 50	
Benzoic acid,	1 : 1,000	Chlorine,	1 : 25,000	In the mother liquid.
Methylsalicylic acid,	1 : 1,000	Iodine,	1 : 5,000	
Salicylic acid,	1 : 666	Bromine,	1 : 3,333	
Carbolic acid,	1 : 200	Sulphurous acid,	1 : 666	
Quinia,	1 : 200	Benzoic acid,	1 : 250	

Dr. Sternberg (50), finding that the injection of some blood or serum from the subcutaneous connective tissue of a rabbit, killed by septicæmia, invariably produced death in rabbits in from twenty-four to forty-eight hours, thinks it is manifest that a negative result, after treatment with a disinfectant, is proof of its power to destroy the potentiality of the injected material. He finds that chlorine, nitrous acid, and sulphurous acid gases are reliable disinfectants in the proportion of one volume to one hundred volumes of air; and that the following bodies, added to one hundred parts of such a fluid, act as preventives:

Iodine,	.2	Iron sesqui-chloride,	.5	Zinc sulphate,	1.25
Chromic acid,	.1	Sodium hyposulphite,	.5	Potassium sulphuret,	2.
Ferric sulphate,	.12	Hydrochloric acid,	.5	Tannic acid,	1.
Cupric sulphate,	.25	Carbolic acid,*	1.25	Boracic acid,	2.
Thymol, in alcohol,	.25	Salicylic acid,	1.25	Potash permang.,	2.
Caustic soda,	.25	Zinc chloride,	2.5	Borax,	2.5
Nitric acid,	.25	Caustic potash,	1.	Glycerine,	12.5
Sulphuric acid,	.5	Iron-alum,	1.	Alcohol, 95 p.c.,	25.

Onimus (52), found that alcohol, iodine, and sulphuric acid rendered septicæmic blood harmless, but neither quinia nor 45° C. were of any avail. Davaine (53), found that $\frac{1}{10000}$ of a drop of blood from splenic fever cases on inoculation caused splenic fever, but that this was nullified by heating it to 55° C. for five minutes; and that after the addition of one part of chromic acid to 7,000 parts of diluted splenic fever blood the animal died, while 1:5,000 parts was sufficient to save its life. His experiments showed that animals died or survived by the following proportions of antiseptics:

KILLED.	SUBSTANCE.	SAVED.
1 : 5,000	Hydrochloric acid.	1 : 3,000
1 : 300	Ammonia.	1 : 150
1 : 200	Silicate of soda.	1 : 150
1 : 500	Caustic potash.	1 : 375
1 : 200	Wine vinegar.	1 : 150
1 : 2,000	Permanganate of potash.	1 : 1,250
1 : 8,000	Sulphuric acid.	1 : 5,000

and subsequently (54), when he mixed one part of splenic fever blood with 1,000 parts of water, and then one part of this mixture with 10 of alcohol, found it harmless. Hatton (55), proved that phenol, alcohol, and permanganate of potash were destructive to germs, and also cyanogen, until decomposed into oxalate of ammonia. While one hour's (56) exposure to dry heat, at 60° C., kills the bacteria of putrefaction,—20° C. does not, and it requires 75° C. (57) to kill the micrococcus prodigiosus.

Water in excess is sufficient to prevent the rapid growth of germs, but the most interesting fact is, that the most powerful antiseptics and aseptics known are those chemical bodies produced by the disorganization of the germs themselves. The fact that carbolic acid, one of the reliable antiseptics, is the product of their decomposition in the body, shows that we know as yet very little about their life-history, or the proper modes of developing or preventing their growth. Wernich

* It requires the one-twentieth part of carbolic acid to prevent the growth of germs in beef extract (51).

(4) gives the antiseptic action of these aromatic bodies, as shown by the hindrance of the development of bacteria in 100 gms. of Pasteur's fluid, as follows:—Skatol .05, indol .1, phenylpropionic acid .1, cresol .2, phenylacetic acid .25, and phenol .5.

The diversity of action of antiseptics, as deduced by different authorities, is undoubtedly due to the fact that various germs were experimented with, and that in some cases the bacteria more readily antagonized took the place of the permanent spores.

The bacteria of decomposition (58) appear to be the active agents in what is known as blood-poisoning, as has been shown by investigations of Lister and Koch. It is affirmed (59) that "the micrococci of diphtheria may act upon the exudations of the trachea as the yeast-plant acts upon sugar and cause the production of a septic poison, which differs from that of ordinary putrefaction, and when absorbed bears such relations to the system as to cause diphtheria," and that (8) "they do not differ, as far as observed, from the micrococci of furred tongue, except in their tendency to grow in culture fluids, while their rapidity of growth is in direct proportion to the malignancy of the case." Dr. Sternberg, our great authority in this country, after advancing some valid reasons to show that, as yet, the proof of malaria being caused by the bacillus malariæ (Klebs and Tommasi-Crudeli) is unsatisfactory, says (60): "While, however, the evidence is not satisfactory, there is nothing in my researches to indicate that the so-called bacillus malariæ or some other of the micro-organisms associated with it is not the active agent in the causation of malarial fever in man; on the other hand there are many circumstances in favor of the hypothesis that the etiology of this fever is connected directly or indirectly with the presence of these organisms or their germs in the air and water of malarial localities."

Many authorities maintain that the micrococci of septicæmia are only the carriers of a poison capable of producing the disease, and among them Billroth (*l. c.*), "are only infections after they themselves have been infected."

Others assume that the micrococci give rise to a chemical poison, which acts as a necrotic to the tissues, and which may be eventually obtained from the germs themselves; while others think there is a direct perforation of the tissues by the germs,

and that they can wander into the blood-corpuscles (Klebs and Hueter); others think that the bacteria, ordinarily present, acquire power to change their locality or mode of development.* It is believed (22) that, during inflammation, processes arise in the tissues, which increase their resisting power to the germs, and, in many cases, prevent the natural modes of cure of infectious diseases. It is manifest (62) that the human body is used, in many places, as a nutrient substance by these organisms. The dependence of these organisms on the culture-media used, and the fact that micro-organisms, after cultivation, can be transplanted from one animal to another, while their life-history is obscure, renders it probable that many diseases are caused by them.

The following diseases are common to man and animals (63):

Glanders and farcy in horses.
Rabies in dogs and cats (also in skunks).
Anthrax in all domestic animals.
Tuberculosis in all animals.
Asiatic cholera in all animals.
Milk-sickness in cows.
Small-pox in chickens, pigeons.†

The germ diseases are also found in lower orders of animals, such as (65) the mucor-melitiphorus in bees (which are, as is well known, easily killed by yeast, a saccharomycete); pebrine, flacherie, and muscardine in silk-worms; the ordinary autumnal epidemic of house-flies; and different varieties among fishes and birds.

Pasteur believes that the germs of anthrax are conveyed to the surface of the earth, from the burial-pits, by earth-worms, but Koch (*l. c.*) has shown that they are very poor *messagers des germes*. Our common insects, such as flies and mosquitoes (filaria sickness), are now supposed to be the carriers, as, contrary to the general opinion, the air is not crowded with germs as much as is supposed.

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* Typhoid fever (61), for example, in common with all intestinal mycoses, has the properties of making its cause affect the system, by its action on the intestinal canal. The bacteria found in the glandular apparatus are part of the metamorphosis of the bacillus subtilis, abundantly present in the large intestine. The organisms, living purely saprophytically in the colonic fæces, acquire the power to get into higher portions of the intestines, there accommodate themselves, and become invasive.

† Also in cattle, sheep, pigs, dogs, and asses (64).

The portion of the system invaded seems to depend on the organisms, and accordingly various authers consider the respiratory tract (22), the intestinal tract (66), the tonsils (62) as the favored localities of invasion.

These infectious matters appear to get into the air in dust form, more particularly as spores, but only after thorough drying. Composed, as they are, of (67) molecules of albumen and grape-sugar, which ordinarily cannot be evaporated from a watery solution, it is hardly probable that ferments can be conveyed from any watery solution by currents of air.

The dried masses, or the residue of a dried fluid, transformed into dust by mechanical action of some kind, are subsequently wafted in all directions by currents of air. The presence of a gelatinous sort of material (especially with the permanent spores) appears to cement the germs very firmly to the objects to which they were originally adherent. It appears (68) from some experiments that very strong currents of air cannot detach them from compact substances as wood, iron, and glass, whilst it requires only a weak current to free them from substances of an opposite or porous character, as cotton, wool, silk, and the like. Currents of air likewise passing over or under, or even through fluids, do not carry along with them the germs unless the fluid becomes covered with foam. Some authors (67) even go so far as to say that moisture, and even dirt in houses, may assist in the purification of the atmosphere by retaining the germs in contact with it.

In accordance with these facts a rational hygiene (62) would suggest that no porous object, no bed nor mattress should be cleansed in the bed-room. Wet cloths are best for removing dirt and germs from the floor or other surfaces to which they are adherent. In sickness the walls and even floors can be occasionally wiped by a moist cloth, for, with our present knowledge, it is far better to prevent the conveyance of a poison to the system than to neutralize it afterwards. Patients suffering from infectious diseases should have their own utensils and not use a common water-closet, not chiefly because the fæces may subsequently be a cause of infection, but to prevent the immediate deposit of germs on the rims of the seats. All vessels in use in a sick-room should be washed out with a solution of at least 5 p. c. of carbolic acid. A plentiful stream of water through the water-closets will carry away the germs, and the

fæces can, with advantage, be buried or burned. The urine should also be disinfected, and after sickness all worthless matter burned, and valuable materials, where possible, disinfected by heat. Corrosive sublimate is thought to be our most reliable and potent internal antiseptic. Patients should be sponged off with carbolic oil and water.

What may be accomplished in future by a process of vaccination, or attenuation of the hypothetical specific germs, is still problematical; but our present knowledge of germs warrants us in laboring in that direction with the confident hope of securing some valuable humanitarian results. Single, and very simple elementary principles, in every department of science, have led, through the persevering efforts of thoughtful individuals, to the most extended and beneficial consequences in human society.

The telephone and electric light, in another department of pursuit, are now producing immense changes in the condition of society and the communication of thought; and the field of medicine is open, in a similar way, to reward the patient student of its mysteries with discoveries intimately connected with human happiness. As Franklin's simple experiment with the kite has led to the utilization of the lightning of heaven, so we may expect some future physician, by his labors, to make the very diseases of the human system contributory to their amelioration and cure.*

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* Some experiments of Dr. Koch, too recent to be embodied in the Address almost conclusively prove that tuberculosis is a germ disease, which can be inoculated from animal to animal. His labors are now leading him to discover, if possible, some method of weakening or attenuating the virulence of the germ.

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W. F. MUHLENBERG.

GHEEL.

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I.

Writers and speakers often refer to the insane colony of Gheel as proving their views concerning the care and treatment of the insane. It is quietly taken for granted that this is the very paradise of lunatics, and in the enchantment lent to the view by distance, each one is allowed to bring from this somewhat hazy region whatever he goes for, and what he considers most likely to answer his purposes.

I propose to give a short account of Gheel, using for the foundation of my remarks the result of observations made during a few days sojourn there some years ago, supplementing them by the recorded experience of others who have more recently made pilgrimages to this Mecca of the alienist. An honest study of this kind cannot fail to assist us in estimating correctly the value of much that has passed into and formed a part of the literature on the subject of insanity.

A large number of papers, and even independent books, have been given to the public on this subject, many of them by the most able and experienced writers on mental diseases. They have personally investigated Gheel and the system of care for the insane, which has made it famous, and have put the result of their studies on paper. It is not to be supposed, therefore, that under these circumstances I should be able to bring before you anything new, or to put what has been so often expressed into clearer light, or clothe it in more attractive phrase, and my only justification for asking a part of your time during these sessions is the hope that I may present material, which would otherwise probably to most of you always remain hid away in unopened and dusty volumes.

Gheel, then, is the name of a small town, located in the northern part of Belgium, some twenty-five miles east from Antwerp. The commune, or township, of which it is the chief village, bears the same name, and is some seven miles square. The population of the entire commune is 12,000, of whom one-third are in the town of Gheel, and the remaining two-thirds are distributed through eighteen or twenty farms and hamlets. The commune is a part of the province of Antwerp, the most northern division of Belgium, and it has in its landscape much more of the monotonous level, which is characteristic of the neighboring state of Holland, than the other inland provinces of Belgium, which have a pleasing variety of hill and dale. When we think of Belgium as the most densely populated state of Europe, with an average number of 461 souls to the square mile, rising in one of the provinces to 741 (the average in this state is 93), of its enlightened and liberal system of education, of its museums, learned societies, public libraries, manufactures, charitable institutions, and of its scientific agriculture,—a picture of intelligence, business activity and thrift presents itself to our minds which we naturally apply to every part of the little kingdom. If, however, we make such an application to Gheel we commit a great mistake. Almost the entire population, whether residing in town, village, hamlet, or on farms, is engaged in farming, making lace, and the care of the insane. The soil of a large part was originally a mixture of barren heath, sandy plain, and bottomless morass, which it has required extensive drainage, diligent cultivation, and the use of fertilizers for centuries to bring to a tolerable state of improvement; but around some of the hamlets much remains yet to be done, if, indeed, nature does not offer insurmountable obstacles to the satisfactory completion of the work. The last ten miles of the journey to Gheel are made by diligence from Herenthals. where the visitor leaves the railroad, by which he comes from Brussels or Antwerp. The sight of this rattling conveyance, fastened by rope harness to two decrepit little animals, is not calculated to excite encouraging emotions in the breast of the traveler who is in the pursuit of knowledge concerning the most advanced means for ministering to the distempered mind. With only two turns in the road from a straight line, the entire distance is made in two and a half hours. The paternal character of the government is shown by

the nature of the road, which is a sample of all in the country. The width of one track is paved with a six-inch cubical block of a hard imported stone. On each side of this is a summer road, where the wheel cuts down deep into the sand, and whose margins are lined with rows of stunted poplars, oaks or beech. Here and there a thatched clay hut or a miserable pine interrupts the dead level of the hazy horizon. When the soil is not too poor to prevent farming operations, men, women and children may be seen at work in the fields. The civilization of this community does not acknowledge any disparity between the sexes; either it has not yet reached the point of that artificial distinction or has passed beyond it. All spheres of labor are open to woman, and, if any partiality exists, she has the preference where severe muscular efforts are called for, so that it is not an unusual sight to see a cow hitched to the cart on one side of the pole and a woman occupying the corresponding place on the other, but seldom or never a man. As one approaches the *town* of Gheel in this direction the soil becomes more productive and the condition of things more favorable, but in other parts of the colony the change is in the opposite direction, and the appearance of poverty and discomfort becomes more marked. On a large map of the commune, where every name of a place or region used by the people in every-day life is put down, the frequent occurrence of the Flemish word signifying *heath* has an ominous significance. In 1861 the commune had 1,913 houses; of these 618 comprise the town of Gheel, and the remaining 1,295 the rural districts.

The story of the origin of Gheel as an abode for the insane may here be briefly given. It is that about the year 600 the beautiful daughter Dymphna, of an Irish king, crossed the North Sea in search of shelter from the unnatural passion of an enraged father. In company with his servant, Gerobert, through whose instructions both father and daughter had become converted to Christianity, she arrived at the Church of St. Martin, on the spot of the present Gheel, and believed, with her devoted companion and attendant, to have found a safe retreat in this far-off wilderness. By the side of the church a hut of pine branches was constructed, from which the incense of grateful hearts ascended daily to Almighty God, who had granted the safety in a foreign country which had been denied at home. Their whereabouts was soon heralded to her father, and without

delay he appeared, with a horde of followers, to take back to the Green Isle his fugitive daughter. Her devoted attendant he slew, and as he failed to induce her to return with him, his passion became aroused, and with his own hands he took her life also. Her gentle manners, religious sentiments, and benevolent conduct towards the attendants and officers of the royal household had paralyzed their hands, and they refused obedience to the royal command, which was then executed by his own. In order philosophically to connect subsequent developments with this event, the supposition is necessary that the father was insane, and that he perpetrated the fearful misdeed in a fit of maniacal fury.

The murdered Irish princess was buried on the spot. Soon the story became current far and wide that presence at her grave cured convulsions and diseases of the mind; she was enrolled in the catalogue of saints, and henceforth St. Dymphna has been considered the special patron and protector of the insane. Alas! that her powers and office should have been so inefficiently exercised to save her wards from inhuman cruelties and wrong.

When we call to mind the absurdities which otherwise intelligent people permit themselves to become guilty of in surgical matters, even in the present day of boasted enlightenment, we cannot be surprised at the effect that this fame of St. Dymphna's powers had, at a period of the world's history when ignorance and credulity held undisputed sway in the sphere to which insanity was then consigned. The afflicted were brought by their friends to the grave of the newly made saint, some remained a day, others a week, but whether their sojourn was long or short they needed, while it lasted, a home somewhere. The inhabitants were ready to share their humble abodes with the necessitous strangers. Pious motives prompted some to this act of hospitality. In the case of others mercenary considerations no doubt were at the bottom of their conduct. These hospitable people of twelve or thirteen centuries ago may, without violence, be taken to be the remote ancestry of the present generation of nourriciers or guardian nurses, who take the insane into their families under government regulation. Some, as of old, with motives entirely honorable, and others controlled by the trading spirit, anxious to turn a penny.

Connected with the church already mentioned is still found

a small house containing three or four contracted rooms or cells only dimly lighted. Over the entrance door is a gaily-robed statue of the patron saint with the invocation underneath "St. Dymphna, pray for us!" These form the apartments in which the Neuvaine or notorious nine days' devotions were performed. These required the lunatic, or in extreme cases his representative, to remain in this place nine days, and to offer prayers nine times each day at the tomb of the saint situated in the choir of the adjoining church. Each cell is furnished with bedstead of strongest construction and a variety of restraining apparatus, including heavy leather belt and mittens and iron bull-ring secured in the wall. The presence of a small brass funnel with perforated and literally indented outlet gives incontestable evidence that no pretense of family treatment and free air can always make forced alimentation unnecessary. The course of exorcism here regularly taken at first became less frequent as the nature of insanity was better understood and the mass of the people became more intelligent. During the French revolution, when the tide of rationalism made its impress on all Europe, the proportion of those who took the Neuvaine was very small, to be largely increased in subsequent years, again to diminish later, but not even yet reaching the proper mark of zero.

I have thus very briefly given the essential facts bearing on the origin and history of Gheel. They show its present condition, which is now to be referred to, has been attained by a process of evolution from its first or simplest elements, namely, the superstition that miraculous cures took place at the shrine of St. Dymphna: the accommodation of the sick by the inhabitants while waiting to be cured, and, finally, the establishment by the government of a system of inspection and control, in order to prevent abuses or remove such as existed.

For convenience of administration and classification the entire colony is divided into four sections, each of which is designed to accommodate a particular class of cases; thus, according to official documents:

Section 1 is made up of the borough of Gheel and four small hamlets, containing in the aggregate 411 insane, placed with 312 guardian nurses. These accommodations are designed for the curable or incurable of every form of ailment, which requires a special and continued attention.

Section 2 has 159 nurses, who take care of 236 patients, living in four villages, more remote from the central borough. These patients consist of the demented, melancholy, idiotic, excited and paralyzed.

Three hamlets make up the third section, with its 120 nurses and 165 patients, who are in theory epileptics, assigned here because there is no stagnant water.

The very noisy, indecent, and all others requiring special disciplinary measures, are distributed through four or five towns lying on the outskirts of the commune. These number 196, and they live with 144 nurses. This makes the fourth section.

A glance at the map will very soon show that the demands of this schedule, so far as the location of the villages is concerned, are not complied with, and that some of those which contain the noisy and aggressive patients are no more remote from the borough than others in which the quiet and harmless are sheltered.

From one to four patients may be received into one dwelling, but never more, nor can they be of more than one sex, unless special authority is obtained for the purpose.

If the houses are examined in which the nourriciers live and into which the patients are received, every grade is found, from the stately mansion in the borough surrounded with shrubbery and flower-beds, affording to the well-to-do guest all the comforts he may desire, to the one-storied thatched roof in the far-off corners or rural parts of the commune, in which the floor is of mud or brick, and the kitchen and large fireplace take up the first story, and the windowless sleeping closets in the attic are reached by ladder. In less humble abodes there may be additional apartments on the first floor, but not enough of them to give parents and children one room and wards or patients another, but the entire household are lodged together. If the nurse happens to be a mechanic, it is not impossible that the kitchen may, in addition to its proper function, have to perform those of a workshop as well as of family sitting- and dining-rooms. The smouldering peat on the hearth warms the shivering inmates sitting on their haunches around it; contrary winds bringing the smoke down through faultily-constructed chimneys suggest additional discomforts. In such small and crowded, low and damp quarters, twelve and a-half per cent. of the patients

were accommodated in 1861. Children and grown people, master and servant, sick and well, obscene, profane, demented, violent, epileptic, dirty and wet huddled together, and sharing alike the fortunes of the nourricier, whose poverty will every now and then be aggravated by a scanty harvest, unusual or prolonged illness or stagnation in business. The gentlest disposition and most lively sympathy would, in such utter absence of means for accomplishing anything, find it impossible to give proper care to the helpless; but, alas! for those, and there must be such, who fall into the hands of the poor not only, but of the selfish, greedy, unprincipled, tyrannical. It is one of the dark features of the system that the most helpless were, and probably are still, hid away in such uncomfortable places, in remote, out-of-the-way parts of the colony, unnoticed and only with difficulty accessible. It is evident that in such unfavorable hygienic conditions mental symptoms must be aggravated, and bodily ailments produced which previously had no existence.

One visitor, who explored these parts of Gheel in September of 1861, declared that he found in almost every house several inmates, both sane and insane, laid up with intermittent fever. In general, it would promote correctness in our notions on this subject to bear in mind that travelers to Gheel who are carried away with its beauties have usually selected the pleasant season of the year for their explorations, when doors and windows, where there are any, are open, and every one is on the street or in the field. They should temper their enthusiasm with the sights to be seen in midwinter in the so-called *cottages* of the fourth-class nurses, who receive one dollar and under per week for the entire support and care of their patients. It needs but a sluggish imagination to picture to one's self the condition of a family that would be willing for such a sum to take the responsibility, and incur the labor and annoyance, as well as risk of bodily and moral injury to themselves and family; all of which is implied in the care of a lunatic. How limited, under such circumstances, must be the means for furnishing proper nourishment, for restraint of conduct into the bounds of outward morality, for safety to the suicidal and nursing of the sick, not to speak of proper temperature and change of air, comfortable bedding and clothing, cleanliness, entertainment and diversion.

In the year 1859 there were out of 1,913 houses in the com-

mune, 617 which received patients. These were divided up into four classes, according to the quality of the accommodation afforded; more than one-half belonged to the third class; 280 of the entire number had room for one patient, and 297 had room for two.

I have already stated that the commune is divided into four sections. Each of these has a physician (*medecin de section*), engaged also in private practice, who visits his patients once a week, and reports to the superintendent (*medecin inspecteur*) of the colony once in three months. It has also a non-medical supervisor (*infirmier garde*), who makes his rounds daily among both male and female patients, and reports as often to headquarters. There are, therefore, four division physicians and four division supervisors in the colony, who are under the superintendent or *medecin inspecteur*.

In judging of the suitableness of Gheel to take the place of ordinary insane hospitals as they exist in this state for instance, it must be borne in mind that a decree is in force which forbids the reception of patients who require the prolonged use of restraint or coercion, the suicidal, the homicidal, and incendiary; those who would make frequent attempts to escape, or whose disease is of a nature to disturb the public tranquility or offend public decency. Now, it is chiefly such patients as are excluded from Gheel by this decree, that seek admission into state hospitals, and under the operation of defective laws which are in force, as soon as they have progressed far enough towards comfort or health, to have lost those characteristics, they are taken to their homes or the poor-house. The features of the disease which exclude the patient from Gheel are those without which he is not usually brought to a so-called closed hospital, or kept in it. In the light of this fact, those who uphold the one system in disparagement of the other which is in vogue in this country, occupy a very illogical position.

But insanity often changes its character; the patient that is quiet and inoffensive to-day, may be very demonstrative or dangerous to-morrow; hence it is impossible to carry out such a decree, and it is a matter of daily occurrence that all its provisions are violated; and the necessity has long been felt of a department or building in which the violent, dangerous, suicidal, feeble, migratory or indecent could be more suitably taken care of than in the ordinary homes of the inhabitants. Before Es-

quirol the government had been reminded of this necessity. Its indisposition to act led to the establishment of a provisional infirmary, in other words, a temporary hospital, by the local authority. Finally in 1861, the government completed a permanent structure of a neat and substantial character, not unlike in its arrangements to a first-class modern hospital as found among the enlightened nations of Europe or America, with room for fifty patients. This delay of half a century appeared so long and unreasonable to the talented Parigot, that he resigned his office as *medicin inspecteur* in weariness and disgust. This hospital, or *infirmary* as the educated call it, and *castle* or palace as it is called by the people on account of its stately appearance, with the use to which it is put and the manner in which its affairs are administered, completely surrenders the claim that family treatment of the insane, pure and simple, is all that is required. Even without any change of the rules discriminating against the admission of the troublesome classes of the insane, this building is too small; if now every class were turned loose into the colony there would have to be much abatement of the claims which are in themselves well enough founded, that there is here a system of treatment entirely peculiar.

This subject can only be imperfectly treated on an occasion like this; it is so large and many sided. I close with a few reflections.

1. Whatever success Gheel has attained as an abode of the insane, for their care and treatment, is very largely due to the character of its permanent residents, which again is the product in part of the political institutions and physical characteristics of the country. There are here peculiarities of which it would be in vain to search for the duplicates. The occupation of caring for the insane, followed for many centuries by parents and children, succeeding each other in the same line, has developed a present race of nourriciers, which it would take almost other centuries to make from a new stock. Where would there be a possibility for such a process of development in a country like ours, where every one considers his position to-day only a vantage ground for something better to-morrow?

2. Such words as cottage, unlocked doors, free air, and family treatment have a charm which is brought out into strong relief by their opposites. But a cottage may be a hut under a

leaky thatch, whose cubit sleeping box under the roof is reached by a ladder. Unlocked doors and free air are not necessarily synonymous with liberty where the inhabitants of a township are spies on the movements of every one out of doors, and vigilance is stimulated by the certainty of pecuniary loss to the guardian in the event of escape by the patient, and men and women may be tethered like bullocks to a stake in the field. Family treatment is suggestive of the comforts of home and of enjoyment, nowhere to be found outside of the refined Christian household, but most of the insane no doubt became ill while members of families, and families as such cannot claim exemption from their full proportion of the sufferings and ills which result from poverty, ignorance, and passion. It is not so clear, therefore, where the special remedial virtue attributed to residence in a family is to be placed.

3. The professional, if not the popular cry, is for more thorough and systematic medical treatment, for more thorough and constant inspection and supervision of Hospitals for the Insane by authorities, independent of and superior to the officers in immediate charge of them.

Gheel which is so often commended for imitation, has a superior commission which inspects once in six months, a permanent commission for which no special periods for this purpose are assigned, a medical officer, engaged also in private practice, who makes his rounds weekly and reports to his superior once in three months, and a supervisor who makes his tour once a day. In the state hospitals there are usually a Board of Trustees, who visit once in three months and by local committees once or twice a month; resident medical officers visiting all the patients twice a day, and supervisors who live in the wards. Competent inspection and supervision whose character is the best proof of its motive being sincere sympathy with the helpless and afflicted, can never be too frequent, constant and searching, and any structural arrangement or scattering of patients which make such oversight practically impossible is a most serious defect.

4. In view of the fact that in comparatively recent years, Gheel has practically abandoned exclusive family care of the insane, following the light that prolonged and wider experience had given, and that the supporters of the orthodox closed hospital idea are interpreting their maxims more liberally, are we

not entitled to expect, and shall we not hope and pray that soon extremists at both ends of the line will cease to dread inconsistencies with their past record, and work harmoniously and unitedly in this widening field of philanthropic and scientific labor, where a burning love for our afflicted fellow beings shall consume the prejudices and clarify the vision of all.

THE OLEATES AND OLEO-PALMITATES IN SKIN DISEASES.

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At the meeting of the Society in 1879, I called attention to the oleates for dermic medication, and spoke at length upon the great value that they possessed over the *ordinary* ointments then in general use. At that time the oleic solutions of mercury, atropia, and morphia were considered in their application to cutaneous diseases, and I also brought forward and showed, for the first time, specimens of the oleates of lead and bismuth. These supposed oleates were only oleic solutions, and their high price, indefinite and unstable character, caused Dr. Lawrence Wolff, of Philadelphia, who had been informed by me of many negative results from their use, to make a series of chemical experiments, which resulted in the production of chemically true oleates.

Oleates must not be considered merely as solutions of oxides in oleic acid, as previously described, for, according to our present views of chemical philosophy, they were nothing else as heretofore manufactured, but rather as definite chemical compounds or salts having no excess of either their acid or basic radicals. While the oleic solutions could not have therapeutically presented results different from those of the oxides employed in solution, the oleates themselves present a much different action by being in a chemically readily diffusible state.

To speak of a five or ten per cent. oleate is quite as absurd as to do so of a five or ten per cent. sulphate of quinine, morphia, or atropia, which we know to be compounds of a definite character. These salts, while possessing more efficacy at once, are of a stable character very different from the oleic solutions heretofore used; and by containing less of the expensive oleic acid, they are therefore less costly, an item which, for their practical application, is evidently a most important one. Oleate of mercury, as heretofore prepared, is well known to be unstable, and consequently unreliable, because of the presence of a large amount of free oleic acid, which, being a readily oxidizable body, soon deprives the mercuric oxide therein of its oxygen, precipitating a greater portion of it, if not altogether, in form of mercurous oxide and metallic mercury, which all of you have probably observed at the bottom of such preparations. Such cannot be the case in chemically combined or true oleates, whose action will be a uniform and reliable one.

Dr. Lawrence Wolff, of Philadelphia, has found the best and most ready method for preparing oleates to be by the double decomposition of sodium oleates with solutions of neutral salts, and as a general method of their manufacture proposes the preparation of the former by a saponification of oleic acid with a solution of sodium hydrate. A solution thereof in eight parts of water is then precipitated by the salt required; this precipitate washed and dried yields the oleate required. Of the manner of preparing each individual one, I will speak under their respective headings. For greater economy's sake the oleo-palmitates —double salts of oleic and palmitic acids with the metals or bases required—may come into use; and, in fact, when manufactured from a soap of the oil of sweet almonds—which contains less palmitic acid than other oils—may for dermic medication answer almost as well.

OLEATE OF MERCURY.

Oleate of mercury is prepared by precipitating a solution of sodium oleate with mercuric chloride. Or a mercuric oleo-palmitate may be derived by using the sodium oleo-palmitate instead. The precipitate will readily form on boiling the solution. It may, for use, be mixed with either the paraffinates, or, better still, lard or lard oil. An ointment containing one part oleate to three parts lard will give what I term a twenty-five

per cent. ointment of oleate of mercury; while, if mixed with equal parts of lard oil, it forms a fifty per cent. ointment.

It is the best local stimulant and alterative application of all the mercurials. It is a yellowish chemical combination, with a fatty smell, and of an unctuous consistence. It will produce, when used on the unbroken healthy skin, marked stimulation bordering on congestion; while upon any tumors, indurations, glandular enlargements, and thickening of the skin, it has a most valuable resolvent and alterative action. Its advantages over the old mercurial ointments now generally in use, are:—

First.—Its chemical combination, which makes it better absorbed by the skin.

Secondly.—Its solubility in fats, contrary to the suspension of other mercurials therein, gives it great penetrating and absorbing action, manifesting itself in prompt remedial effect.

Thirdly.—It possesses also the advantage of obviating the rancidity which is sure to occur with other mercurial ointments.

Fourthly.—It is more economical and cleanly. It is more economical—as a small piece suffices for its remedial action. It is cleanly—for by its rapid absorption into the tissues it will not stain the linen.

In the inunction treatment of syphilis, which has unjustly fallen into disuse, this oleate can be advantageously used, especially when there is derangement of the gastro-intestinal canal. It is not necessary, in my experience in using this oleate for inunction, to give the patient any preparatory treatment, such as diet and baths, prior to an application, to render the skin supple and better able to absorb the mercurial; neither will it be necessary for the patient to be enveloped in linen or cotton; or to apply the mercurial under very high temperature. It can be applied in a simple, cheap, and clean manner, when the patient retires at night; by gently rubbing in a small portion of the stronger ointment, about the size of a small marble, on the thighs, the limbs, or on the sides of the trunk. It will be rapidly absorbed, will only leave a reddened surface on the skin, and will not dirty up the linen, or cause the vexatious routine method of old mercurial inunction treatment. It will, however, be necessary to apply cautiously this powerful remedy, as its deep penetration into the skin, and its quick diffusion, will often bring about more rapid constitutional effect than the ordinary mercurial ointments.

I employ it with success in indurations after abscesses; in excess and deficiency of pigment, either as a disease, or from applications, or as an effect of disease; in indolent papules, tubercles; in obstinate ulcers, particularly the syphilitic; and in cases of enlarged testicle. In the indolent and chronic stage of psoriasis, in which the patches are thickened, harsh, dry, and cracked, the application of the oleate causes them to rapidly disappear. It is necessary, however, in case of psoriasis, before applying the oleate, to remove the scales by alkaline baths, oils, water-dressing, or wet packing. In all forms of vegetable parasites the oleate, lightly smeared over the surface, will not only kill the parasite on the surface, but will frequently, by its great penetrating and diffusive action, pass into the hairs, the follicles, and sebaceous glands, and destroy the fungus that may have been propagated beneath the skin. In phthiriasis, or lousiness of any part of the body, the oleate destroys alike the parasite and the nits, which sometimes escape other mercurial preparations which are suspended in a mechanical way.

Lastly, the oleate of mercury may be employed advantageously in combination with other oleates. Thus: ten or twenty grains of it, mixed with one drachm of the ointment of the oleate of lead, is often very effective in chronic acne and eczema, especially in the fissured variety of the latter, which is so common on the plantar and palmar surfaces. In all the syphilitic skin eruptions, and in superficial ulcers, one drachm of the oleate of mercury with three drachms of the oleate of bismuth, or the same quantity of the ointment of the oleate of lead, acts quickly and decidedly. The oleate of mercury, in the proportion of one or two drachms to one ounce of oil of ergot, forms one of the best and most efficacious oily applications that can be used to that common affection, loss of hair, in which the scalp, or the parts on which it occurs, looks harsh and dry, the hairs being dull and lacking their peculiar lustre.

OLEATE OF ZINC.

Oleate of zinc is made by decomposing a sodium oleate, with a saturated solution of zinc sulphate; boiling out and drying the precipitate, and then reducing it to an impalpable powder, which is rapidly accomplished. One part thereof, melted with three parts of a fatty vehicle which yields the ointment, I have been in the habit of using. I have obtained, however, the very

best results with the oleate of zinc alone, and not mixed with a fatty diluent; which is a fine pearl-colored powder, with a soft, soapy feel, very much like powdered French chalk.

When dusted over a denuded surface it will have, by the combination of the oleic acid and zinc, a stimulating as well as an astringent action. It is *par excellence* the remedy for excessive sweating, or in cases of hyperdrosis and osmidrosis. I have been using it for more than a year, dusting it over the surface in patients suffering from an increased flow of sweat about the palmar and plantar surfaces and around the axillæ and genitalia. It has relieved and permanently cured some of the most distressing cases suffering with excessive secretion about the feet, in which the epidermis had macerated and peeled away, leaving a tender and exposed skin, and giving rise to a very disagreable odor. It is likewise most efficacious as a lady's toilet powder, particularly to those who are afflicted with shining faces in the summer, called seborrhœa oleosa. It is the most valuable and the most reliable remedy in that commonest variety of eczema known as eczema visiculosum. I have witnessed, and also those who have been in attendance in my clinics during the past winter, marvellous results from dusting the oleate over those in whom the extremities, and even the trunk, had been covered with small vesicles, swollen, hot, inflamed, the parts constantly weeping, and the itching so intense that the patient would rub and scratch the surface until it had become perfectly raw; in such cases I have frequently seen the discharge dry up, and the swollen and inflamed skin resume its normal condition, by the threefold action of the oleate, in protecting, stimulating, and astringing the parts. If this oleate be dusted on an inflamed surface that is hot and tumid, such as is found in erythema about the groins and axillæ, and in herpes, particularly of the genitals, it will cling to the skin and will not fall or brush off like ordinary dusting powders. These advantages prove beyond a doubt the superiority of the oleate of zinc over the ordinary ointments and powders in the class of skin eruptions I have just named.

OLEATE OF LEAD.

Lead oleate is derived by precipitating a sodium oleate with a solution of lead sub-acetate. The washed and dried precipitate melted with equal parts of lard gives the ointment I designated as ointment of lead oleate.

This ointment of the oleate of lead, which I also first described in 1879, differs very materially from the imperfect oleic solution I presented at that time. The present ointment of the oleate of lead is cream-colored and semi-solid, of the consistence of simple cerate. It has, when applied to the denuded skin, both a combined sedative and astringent action, and will arrest morbid discharges, protect the surface, and allay irritation. It is also more readily absorbed than either Goulard's cerate or Hebra's litharge ointment, and it is more easily and cheaply prepared. It is of the greatest benefit, and often very successful in allaying the inflammation, and checking the discharge and itching of pustular eczema that is so annoying to young infants. In papular eczema, and in that variety of the same affection that is often found in the flexures of the joints, around the axillæ, the inner part of the thighs, and the perineum, this oleate very effectually allays the intense irritation, and very often quickly restores the parts to their natural healthy state. It is a useful remedy in simple lichen, and in those hard, indurated papules in acne about the face and back, and in the second stage of rosacea; and its value is often very much enhanced in these affections to add to two drachms of the ointment about one drachm of the bismuth oleate spoken of below. It has very often a beneficial effect in that well known fissured form of eczema present on the palmar and plantar surfaces. Should, however, the inflammation and cracking be very severe and deep, and require a marked stimulation, the addition of twenty or thirty drops of the oil of cade to two drachms of the ointment of this oleate will increase very much the curative action on the parts. In ordinary cases of scabies or itch, four drachms of this ointment mixed with half a drachm of milk of sulphur, yields more promptly than when the latter salt is combined with other bases. The ointment of the oleate of lead soothes the irritation set up by the parasite, while by its great penetrating action it carries the sulphur deeper into the skin, and permits the latter ingredient to act more decidedly on the parasite.

OLEATE OF COPPER.

Copper oleate is obtained in a similar manner as the lead oleate, by double decomposition with a saturated solution of copper sulphate. The washed precipitate melted with either

four or nine parts of cosmoline, fat, or lard, gives respectively a twenty or ten per cent. of oleate of copper ointment.

When applied to the unbroken skin, the oleate of copper ointment rapidly penetrates deeply into the parts, particularly into the follicles, and will produce slight stimulation. On the other hand, if brought in contact with broken skin, which it stimulates, an insoluble albuminate is formed, which coats over the surface and supplies the place of the abraded skin.

The most successful results that I have as yet had with the ointment of the oleate of copper has been in rapidly curing cases of ringworm. My attention was directed to this preparation in the following manner: For several years I have had patients tell me at the hospital and in my private practice that they cured this or that member of the family of ringworm by putting an old copper penny in vinegar and applying the liquid to the patches. Some, however, resisted this treatment, and members of the latter class were usually brought to me with the statement that they had cured other children by the copper penny in vinegar, how was it that it did not do this case any good? Judging that while this coppery liquid might destroy the fungus on the surface, if the parasite after a time passed into the follicles at its lowest depth and invaded the hair bulbs, it could not effect it in any way, I therefore reasoned that if the copper solution had the power to kill the parasite on the surface, why could it not do the same within the follicles, providing it could be carried there? Remembering the great penetrating action of oleic acid, I had it combined with copper and mixed with a fatty base, and applied on an inveterate and extensive case of ringworm on the scalp of a child that had been treated by numerous remedies in vain, and in six weeks the case was completely cured. Other cases, both of ringworm on the scalp and body, were tried with equally good results. The ointment of the oleate of copper should generally be used in cases of ringworm, in the following manner: The parts should be first washed with soap and water, and in case the hairs be involved, the hair should be cut short, and, after drying, a small piece of the ointment of this oleate, in proportion to the size of the patch, should be lightly rubbed over the surface. The same procedure should be repeated night and morning, until all traces of the disease have disappeared. The parts should only be washed about once in ten or

twelve days, as the frequent use of water may prevent the oleate from penetrating to the lowest depth of the follicle in order to successfully destroy the fungus. It may also be necessary to pluck out the diseased hairs or epilate in very inveterate cases, although I have cured some without being compelled to get rid of the diseased hairs in this manner. If this method is carefully followed, the oleate just named will no doubt effect a complete cure in some of the most obstinate cases. I have also used this ointment, spread on old muslin, for indolent ulcerating surfaces, and have found it an excellent cleanser and healer. It acted by condensing the tissues and constringing the blood-vessels, and thus lessens the determination of blood to the part. It will relieve, and some of my patients have reported cures from its application to hard and horny warts, corns, and bunions.

OLEATE OF ALUMINIUM.

Aluminium oleate is also prepared by decomposing sodium oleate with aluminium sulphate; the washed precipitate mixed with equal parts of lard gives the ointment of aluminium oleate I shall speak of. The ointment thus prepared is semi-solid, dark brown in colour, and has a most powerful astringent action. It has the most decided action of all the other oleates in checking muco-purulent discharges that occur in one of the varieties of eczema. For this purpose it can be applied with advantage around the arms, groin, or buttock of those who have excessive discharge from the friction of those parts, particularly in infants and children, and so check the profuse secretion, or bring the parts into a suitable state for other remedies. It can also be employed with success as a dressing in foul ulcers, abscesses, sinuses, burns, and scalds, from its power to coagulate albumen, constringe the vessels by its antistyptic action and checking or correcting the secretion of muco-pus.

OLEATE OF BISMUTH.

Bismuth oleate can only be obtained by first preparing a crystallized bismuth nitrate, dissolving it in glycerine, and decomposing with this mixture the sodium oleate. It is of ointment consistence, and should be used as thus obtained.

This combination, which I first used some years ago, and described before the Society in 1879, was manufactured at that time in but a crude manner in comparison to the pearly gray

and soft bland ointment I have been using for the past two years. It possesses an emollient and slightly astringent action, and is a most valuable remedy in soothing and relieving cutaneous irritation.

In pustular eruptions, particularly in sycosis, the oleate of bismuth, lightly pencilled over the surface with a camel's-hair brush, will greatly relieve the engorgement of the parts; it will also often abort the pustules, and will cause to disappear the pricking and itching feeling that so often annoys and wears out the patient. It is equally efficacious in superficial erysipelas, and in sunburn, by soothing and relieving the high inflammatory action of the parts. The various varieties of eczema, especially that form, the papular, which is usually met with in the flexures, are very amenable to the application of this oleate. It is particularly useful pencilled over rosacea, or what is commonly known as a chronic inflammation of a portion of the face; it often subdues intractable cases of this disease, although I apply the ointment usually after thoroughly depleting the parts with a needle-knife. It soothes the hyperæmic skin, relieves the engorgement of the glands, and thus brings comfort and ease to the patient. It will also, when applied freely over the surface in cracked and sore nipples, not only soothe, but will arrest the dry and excoriated condition of the parts.

Although bismuth, in the form of a mixture, has long been used as an injection in sub-acute gonorrhœa and gleet, yet I know of no medicine that will act so well in many cases of these affections as the oleate of bismuth. I have found it very serviceable in subacute gonorrhœa and gleet to pass a bougie covered with the oleate of bismuth, and allow the instrument to remain in the canal for a few moments. In more obstinate cases, I have had good results in wrapping a wax bougie with a thin layer of cotton, covering the surface with oleate of bismuth, and passing the combination into the urethra.

OLEATE OF IRON.

Iron oleate: Precipitate with ferrous sulphate from sodium oleate on boiling is soon converted into ferric oleate, and as such may either be used pure, or if mixed with an equal amount of a fatty base, as my ointment of iron oleate.

When prepared in the above manner it occurs in a reddish-brown paste, inodorous, having a styptic taste, and readily

soluble in fats which hold in combination about thirty per cent. of the oxide of iron, forming a powerful and important therapeutic remedy.

It is free from local irritation when used topically, but when brought in contact with an ulcerating surface it has a very mild astringent action. It can, therefore, be used, as I have tested it, both for a constitutional and local effect. I have already had some excellent constitutional (systemic) results by having a small piece of this ointment rubbed in the axillæ and inguinal regions two or three times a day. The effect of this ointment has been very good on some upon whom I have applied it, who had a deranged state of the digestive organs, and inability to bear the ordinary chalybeates; weak pulse, and a pale and flabby condition of the skin. I have also been using it with marked effect in some cases of scrofula. I am now testing its therapeutic action, not only in cutaneous affections but also in many other diseases, from which I expect shortly to hear favorable and satisfactory results. It will, no doubt, take the place of other chalybeates, particularly when the latter are not well borne by the digestive organs, and will probably constitute one of the best constitutional tonic and local astringent remedies.

OLEATE OF ARSENIC.

Arsenicum oleate must be derived by making arsenious chloride by the cautious saturation of hydrochloric acid with arsenicum metal. The solution thus obtained, precipitate from sodium oleate the oleate required, which I employ in the quantities of twenty grains to one ounce of fatty base, as my ointment of arsenicum oleate. It is in this form a soft yellowish ointment, having no change on the skin except where abraded, or in wounds, ulcerating and granulating surfaces, in which condition it will excite active inflammation and destroy the tissue of the parts to some depth. In lupus, especially the ulcerating varieties, the constant application of the ointment of arsenicum oleate will destroy cell infiltration in a mild and comparatively painless manner. It may be applied with almost as good result in the tubercular form of lupus, providing the parts be thoroughly scraped so as to bring the oleate in contact with an abraded surface which will greatly enhance its action. It can be used very satisfactorily in the ulcerating variety of epithe-

lioma, and will be better borne for a longer period to the parts than any other form of arsenic. I have likewise employed it after puncturing or scraping the surface to destroy warts, condylomata, nævi, corns, horns, and old granulations. In some instances I have incorporated in this oleate, with a very happy effect, opium, belladonna, hyoscyamus, and arnica.

OLEATE OF SILVER.

This new oleate, like the others, is prepared by precipitating the sodium oleate with a saturated solution of silver nitrate, washing the precipitate with boiling water and drying it, after which it is reduced like the zinc oleate to a fine powder. One drachm of this dissolved in an ounce of fatty vehicle forms what I have employed as ointment of silver oleate. Made in this manner it occurs as a pulverulent salt of brownish-yellow color, which, if mixed with lard in the proportion from ten to sixty grains of the oleate of silver to one ounce of lard, forms a dark brown, soft, and pliable ointment.

This oleate in its natural form sprinkled over old chronic ulcers, bed-sores, and exuberant granulations, will set up a healthier state in the parts. The best effects I have experienced from using the ointment of this oleate, which not only coats over an abraded surface by combining with the albumen, and so protecting it from the air, but it also causes powerful contraction of the bloodvessels and thus condenses the tissues. It is a safe and efficacious remedy in erysipelas, and can be used either around the margins to prevent the inflammation from extending, or can be applied weak, ten to twenty grains to one ounce of lard, over the inflamed surface. It has reduced the active inflammation by being constantly applied in several cases of the superficial variety of lupus. It will be serviceable applied to boils and carbuncles, and may often arrest pustulation in its early stage. An intolerable itching that sometimes occurs around the meatus auditorius, the anus, and the genitalia may often be quickly relieved by applying this ointment either alone or combined with opium and belladonna. The advantages that the ointment of the oleate of silver possesses over the ordinary silver ointments are, its stability and prompt action, and by being less painful and milder in its curative action, and still penetrating deeper into the affected part.

The *oleates of quinine*, and those of *morphia*, and also *atropia*, are

made by precipitating a sodium oleate with the aqueous solution of these salts; and for use should either be mixed with the requisite amount of olive or lard oil.

The oleate of *magnesium*, *lithium*, *calcium*, *antimony*, *tin*, and *others*, are also readily made by similar processes, but are at present of little therapeutic value as far as dermic medication is concerned, and are mentioned only for the benefit they may ultimately prove for internal exhibition.

While my experiments with these new preparations cover a period of almost two years, their efficacy and application in the treatment of dermic affections I do not claim yet as having exhausted; and while daily I find new and valuable use for them, I will speak of them further at this time when they are still in their experimental stage, and would court the trial of them by other practitioners, and communications from them as to their results.

I have thus, in a brief and practical manner, endeavored to describe, for the first time, the therapeutic action of chemically true oleates; although I formerly brought forward some of the same preparations as oleic solutions before the Society in 1879.

A few years prior to that period, Mr. John Marshall, of England, published a paper on the treatment of persistent inflammations by the local applications of solutions of oxide of mercury and morphia in oleic acid. It will be observed, however, that these preparations, too, were only solutions, and not the true chemical oleate compounds that I have just considered. While, therefore, the credit is due to Mr. Marshall for suggesting the oleic solutions referred to, I claim to have first used the true chemical oleates, and to have used and published an account of the oleates of lead and bismuth (see *Transactions of State Medical Society of Pennsylvania for* 1879) long before a description of these oleates was published and claimed by some of the foreign journals for Drs. Crocken and McCall Anderson.

The oleates, in the form in which I have shown, enjoy the widest range of therapeutic application. The superior advantages which they possess over the ordinary ointments, I will consider under the following five heads :—

First.—Their deep penetration. *Secondly.*—Their freedom from rancidity. *Thirdly.*—Their cleanliness of application. *Fourthly.*—Their great economy; and *Fifthly.*—Their antiseptic action.

First.—Their deep penetration. The oleic acid in their combination gives them active solvent powers and facility and ability to penetrate rapidly into animal textures, while rendering any chemical ingredient with which it is combined more active and effective in dermic medication.

Secondly.—Their freedom from rancidity. The same acid held in the combination, will always keep the fat, with which the oleate is mixed, pure, sweet, and free from rancidity.

Thirdly.—Their cleanliness of application. The rapid absorption of the oleates into the tissues will prevent any unpleasant disfigurement of the parts, will not stain the linen, and will give comfort and ease in their application.

Fourthly.—Their great economy. The oleate should not be rubbed in vigorously like the ordinary mechanical ointments, which require considerable friction; they only require to be lightly smeared or applied over the surface in very small quantities, hence, their great economy.

Fifthly.—Their antiseptic action. The oleic acid in combination has also a most happy and effective action in rendering the oleates antiseptic or deodorant, upon all discharges and suppurating surfaces.

In addition to the great advantages just enumerated, the oleates likewise possess the power of having incorporated into them almost any ingredient that can be used in dermic medication. Such preparations in different proportions, according to the amount desired to be used, as carbolic acid, creasote, sulphur, tar, arrow-root, starch, iodine, iodide of potassium, chloral, camphor, belladonna, opium, hyoscyamus, nux vomica, ergot (particularly the oil thereof), cinchona, etc. I can better illustrate this point by appending a few of the prescriptions generally used at the American Hospital for Skin Diseases, in Philadelphia, which will show the manner of combining and incorporating other drugs. For instance, the following prescription we use in fissured eczema of the plantar and palmar surfaces:—

℞.—Hydrargyri Oleatis, ℥ss.
Olei Cadini, ℥ss.
Cerati Simplicis, ℥ss.

M. S. Rub well into the part, after macerating in hot water, night and morning.

Again, in infantile eczema the following is often used:—

℞.—Unguenti Plumbi Oleatis, ℥ss.
Pulveris Marantæ, ℥j.
Cerati Simplicis, ℥ss.
Olei Olivæ, q. s. ft. Unguentum Mollis.

M. S. Apply lightly over the surface, and in case of much pustulation of the surface or a swelling of the glands, the addition of one-half to one-quarter of a drachm of the oleate of mercury to the above will be very advantageous.

Further the active inflammation of the bloodvessels and tissues of the face as in rosacea may be checked by:—

℞.—Unguenti Plumbi Oleatis
Bismuthi Oleatis, āā ℥j

M. S.—Apply a very small piece, about the size of a toilet pin, night and morning. If the parts should become much thickened and indurated add one or two drops of creasote.

As a last illustration: In eczema of the anus, particularly when the trouble is due to external piles, the following will give very great relief from the incessant and intolerable irritation of the parts, and often cure the disease:—

℞.—Bismuthi oleatis, ℥ij
Extract opii, gr. x.
Extracti belladonnæ, gr. x.
Cerati simplicis, ℥ss.

M. S.—Apply frequently.

The above are but a very few examples of the addition of other drugs that can be made advantageously to the oleates.

Now that I have given the advantages of the oleates I wish to add in conclusion the objections—for an emollient and soothing action—to using the commonly accepted applications to the skin that are now used often ineffectually and at times injuriously. These objections are, first, to the ordinary ointments, and, secondly, to the petroleum products.

It is a well-known fact to you all, that the ordinary ointments have no power of penetrating deeply into the derma; that the combinations which they form with other ingredients, with which they are incorporated, are usually mechanical, and as a result the fat and the drug are usually found after application caked upon the outside, fulfilling very often only the part

of a protection to the diseased surface beneath. They also by the collection upon the surface soil the linen, run off or trickle down upon other parts, interfering with cleanliness and often disfiguring the person. Ointments likewise kept for any length of time will become rancid, and if applied in such a decomposed state,—which I have seen in many instances,—will excite continued inflammation. Again ointments must necessarily be costly, as they are usually prepared and prescribed in large quantities, and as considerable amount is required to cover a given spot or surface, allowing for the waste on the adjoining parts and that which runs off and stains the linen.

I next pass to the consideration of my objections against using the petroleum preparations. These products are as objectional as bases as the other ingredients usually used for ointments. They even possess feebler power to penetrate the skin, if any at all, than animal fats which have more affinity for the integument. They are also simply melted by the temperature of the parts, and run off largely on the surrounding surface; and will thoroughly saturate all the linen brought in contact with them. Further, the petroleum products retain some stimulating constituent left after their manufacture, which will prevent them from having an emollient action, and which proves a very great hindrance to their use as external remedies, providing you wish to soothe and allay active inflammation. In addition to this I will state that the craze for these paraffinate or petroleum products seems gradually on the wane, not only here but also in Europe.

In investigating this subject I have found that their absorptive power for a penetrating action into the skin, is so feeble as to almost cause them to be excluded as such. Irritant ointments of veratria and other substances which I had made respectively of cosmoline, vaseline, and of simple cerate, manifested themselves in the former two preparations, as almost inert; while the activity of that made with simple cerate very soon became evident. Since making these observations I was pleased to find an eminent authority, Dr. Herrman Hager, make similar statements in his celebrated work On Pharmaceutical Practice, as follows: "The use of vaseline (cosmoline) in place of lard or an ointment in such mixtures which contain a remedial agent intended for absorption by the skin, is much to be discouraged, as vaseline (cosmoline) prevents the absorption thereof."

From all that I have here stated you can readily see that all the objections both to the ordinary ointments and the petroleum products, are overcome in the active solvent powers of the oleates; their deep penetration, their chemical combination, their freedom from rancidity, their great economy, and their antiseptic properties. A great drawback, however, to the general adoption of the oleates, will be the lack of knowledge that the majority of pharmaceutical chemists have, at the present time, of their manufacture.

A most striking instance of this kind recently occurred to me. Whilst bowing a patient out from my office, I was saluted by an individual, who informed me in very loud words, so as to be heard by those who were sitting around, that he had received a prescription of mine, which called for the oleate of zinc to be dusted over the surface. "Now, Doctor, I must inform you that no such preparation exists! The oleate of zinc is used as an ointment." A few moments' conversation clearly showed me that the individual had no knowledge whatever of the manufacture of the oleates, and I distinctly told him so in the presence of my patients for his impertinence and rudeness in endeavoring to correct a supposed blunder I had committed, in that public manner.

I experience almost similar difficulties daily in my private practice. Thus I will often prescribe a certain oleate and be surprised to see no change in my patient, but after careful investigation, which I have made in several instances, by having the patient bring me the oleate, I have found either a substitute or an oleic solution in place of the remedy ordered. Again it has been my misfortune to have some pharmaceutical chemist decry the action of the oleate to my patient, and from these persons I have also learned that they knew nothing whatever about its manufacture. An ordinary mechanical ointment full of lumps was easier mixed in the old stereotyped manner, or a spatula full of a petroleum product incorporated with some metal, was their ideal of a proper kind of a salve that should be used and would be efficacious. You will, nevertheless, find good, honest, and straightforward chemists, who, if they do not understand the manufacture of the oleates, will procure them for you, or will go to work and make them under your direction, but be careful to examine their products and see that they possess all the physical properties which I show you in these most excellent specimens of true and staple oleates.

PROCIDENTIA AND ITS RELIEF, WITH A CASE.

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Any settling down of the uterus in the pelvis is called prolapsus, or falling of the womb.

The term *procidentia* is limited by conventional use to the emergence of the greater part, or the whole of the organ beyond the vulva.

To arrive at any correct conclusion as to its etiology requires us to consider, first, the forces that maintain it in its normal position, and which must give way to produce the displacement.

Authorities differ greatly as to the uterine supports. Ashwell believed the uterine ligaments had no retaining power. Blundell laid great stress upon the retaining power of the broad ligaments. Davis, that there was no power except in what he calls the suspensory ligaments. Dewees doubted whether ligaments were for the support of the womb. Farr could not, from a clinical standpoint, say that the broad ligaments supported it. Savage considers the utero-sacral, and afterward the broad ligaments, the chief sustaining power. Churchill and Dewees gave the credit of support to the vagina. Emmet, while agreeing with Savage, also dwells upon the importance of the vagina. Thomas says, "So long as the vagina is normal in volume, and remains in the pelvis with its walls in apposition, it constitutes by its ante-cervical projection a uterine support. The perineum is the keystone of the arch in vaginal support. The sides of the arch are the rectal and posterior vaginal walls." He also considers the retentive power of the abdomen an important factor. Schenck says it is *no one* of these, but all combine to form a unity of construction. Notwithstanding this mass of conflicting testimony, the fact remains that the vagina is un-

doubtedly the support of the uterus in its normal condition, and the ligaments are nature's reserve forces for accident.

It should be remembered that the vagina is a closed canal, its anterior and posterior walls lie in contact, and that it presents a double curve which is at right angles to the axis of the uterus.

Then, as Thomas has shown, any pressure upon the uterus is resisted by the rectum, and the force transmitted to the lower part of the curve, which is in turn supported by the anterior wall of the vagina and bladder. Let, however, the perineum be torn through, or the vagina greatly relaxed, and the uterus settles down to a lower level in the pelvis, and we have traction upon the uterine ligaments, and the symptoms of the first degree of prolapse.

In all cases of extensive degree, prolapse will invariably be found to have been preceded by a state of relaxation of all the pelvic viscera. The prolapsus occurs because, 1st, there is sudden or undue pressure from above; 2d, the weight of the uterus itself is increased; 3d, from want of proper support below. It will be found, as a general rule, that more than one of these causes has been in operation in every case. It is more particularly an affection of middle life or old age, in women who have borne children, though it has occurred in the young and unmarried, from the straining of dysentery, or the disturbance arising from the uterine contractions in nature's effort to dislodge a fibrous polypus. It occurs more frequently, however, in those who have borne a large number of children, and especially where rupture of the perineum has been neglected. The floor of the pelvis absent, there is a rolling out of the anterior and posterior walls of the vagina, the uterus settles to a lower level, gradually its axis becomes continuous with that of the vagina, and the subsequent descent is rapid.

Women whose occupation obliges them to be much upon their feet are likely to suffer from prolapse. Laborious exercise, as lifting, carrying burdens, etc., promote its progress. Early resumption of domestic duties after labor, sub-involution, or any condition increasing the weight of the uterus, may be considered exciting causes. The frequent use of a widely expanding bivalve speculum, by diminishing the elasticity of the upper part of the vagina, doubtless often promotes a settling down of the uterus, to become ultimately complete pro-

lapse. Great emaciation, removing the cushion of fat in the pelvis, sometimes produces it, especially in the aged. The prolapse may begin, primarily, in the vagina, particularly where there has been marked laceration of the perineum.

Prolapse is usually divided into three degrees: 1st, simple descent, in which the uterus lies distinctly lower than normal, but the os uteri is not visible between the labia; 2d, incomplete prolapse, in which a part lies outside the vulva; and, 3d, complete prolapse, in which the whole uterus, covered by the inverted vagina, lies outside the external genitals, between the thighs. As the uterus descends, the vagina, unless it has been prolapsed independently, is inverted and encroached upon by the descending organ. The greater the descent, the more is the vagina turned inside out.

If the prolapse is complete, the uterus is covered by the vagina, which, by exposure to friction from clothing and limbs, becomes dry, partaking of the nature of integument.

The tumor soon loses its conoidal appearance and becomes swollen. The traction upon the os is often so great as to dilate it, so that the lower portion is covered by cervical mucous membrane, particularly if a laceration of the cervix is present.

The connection of the bladder to the uterus is so intimate that in procidentia we usually find the bladder spread out over the front of the tumor. A catheter passed into the urethra usually takes a downward course. A sulcus is formed, which is not completely emptied of urine unless it is pushed up during micturition. The urine undergoes decomposition, becomes ammoniacal, giving rise to cystitis, and even at times to the formation of calculi.

The attachments to the rectum are not so close, the peritoneum extends down nearly to the lower margin of the tumor. We may have an extensive rolling out of the rectum, forming a rectocele. Douglas's *cul-de-sac* may be filled with small intestines which sometimes become glued in this position, endangering any attempt at return. The uterus usually drags down its appendages with it. As the progress of descent is along the vaginal canal from behind forward we usually fined the uterus in a state of retroversion.

Prolapse occurring suddenly, as from a fall, is attended by fainting, violent hemorrhage, severe pain, and frequently followed by peritonitis. When gradual, the parts become accus-

tomed to the displaced position and the symptoms are less aggravated. The earlier symptoms, beside those of engorgement, are pain in the back, burning sensation in the groins, bearing down, vesical and rectal irritation, weight or pressure upon fundament, all of which symptoms are greatly aggravated by standing and walking, and only relieved by rest in the horizontal position. A vaginal examination with the patient erect will disclose the uterus situated at a lower level, the vagina inverted. As the condition progresses the symptoms of pressure are increased, the os emerges from the vulva upon straining, lifting, or coughing, and again recedes. While in the erect position there is a constant feeling as if a tumor was pressing upon the vulva ready to burst through at the slightest effort. The displacement by interfering with the circulation increases the engorgement and weight. The perineum is gradually absorbed, the vulvar outlet dilated, and especially if the patient is much upon her feet the displacement becomes complete or *procidentia*. All physical exertion produces pain by pressure upon the mass and traction upon the ligaments. Vesical distress is augmented and the bladder only emptied by pressing up the prolapsed portion. A tendency to prolapse of the rectum often gives rise to difficulty in defecation. Another group of symptoms arise from the friction of the tumor against the limbs and clothing. The epithelial layer becomes thickened, the rugæ are lost, and the mucous membrane dries and becomes hard, resembling integument. The urine running over it sets up irritation, often ulceration. The bladder is sometimes opened, portions of the cervix slough off or the whole uterus is thrown off by gangrene. The position of the tumor between the thighs incapacitates her for every sort of occupation. Menstruation is not usually affected by it, nor does it prevent the occurrence of pregnancy. The course of the malady is usually chronic. The prolapse, if neglected, gradually increases and may finally become irreducible on account of the increased size of the womb and the existence of the peritoneal adhesions. The pressure of the tumor between the thighs, bathed with the secretions and frequently eroded, renders the life of the woman extremely uncomfortable.

The indications for treatment are: *First*, to restore the uterus to its normal position; *second*, institute measures to prevent the recurrence of prolapse. The restoration of the uterus in

the early stages of the malady is not difficult. When the procidentia is complete the uterus and vagina swollen and œdematous, the return of the tumor is by no means easy. It may be necessary to scarify or puncture it to allow the blood and serum to exude before attempting reduction. The rubber bandage has been used effectively. Where peritoneal adhesions are present the attempt at reduction may be attended by fatal results.

The ancients allowed mice and lizards to crawl over the protruding uterus, and fumigated it with nauseating odors, under the idea that it was a sentient being that could be frightened back into its hiding-place. Soranus censures Europhon for suspending his patient head downward for twenty-four hours. A somewhat analogous plan was pursued in treating the slaves of Virginia. They were suspended in a sling, with the head lower than the pelvis, and the vagina kept filled with a decoction of oak bark.

The second indication to prevent the recurrence of prolapse may be met by mechanical and surgical measures. The former is by the use of pessaries, of which a large number have been devised. Dr. A. K. Gardner describes one hundred and twenty-three varieties without exhausting the subject.

The intravaginal pessaries act by distending the vagina, and when worn for a length of time become covered with a calcareous deposit, ulcerate the walls of the vagina, frequently opening into the rectum or bladder. In not a few cases they become imbedded in the vaginal walls, and are removed with difficulty. If dependent upon external support, they irritate the vagina and vulva, and are very unpleasant to wear.

Surgical Treatment.—Authorities differ widely as to the efficacy and advisability of surgical measures. Gibson, Beck, and West oppose all. Scanzoni says they always fail; Courty, that they are useless; Chapman considered them of benefit and allowable only when better than mechanical appliances. Hugier amputated with the ecraseur, Recamier and Marjolin with the ligature; Cruvelhier removed the uterus through the back of the vagina; Langenbeck removed all but a part of the fundus; Choppin removed the whole womb; Minch returned the uterus, and made an artificial hymen; Desgrange pinched up longitudinal folds of the vagina in self-closing forceps, and let them remain until they fell off; Bellini passed a ligature about the

upper part of the vagina beneath the mucous membrane, which he tightened,—it cut out in ten days, leaving a cicatrix; Fricke removed the posterior part of the vulva, and used interrupted sutures; Dewees was shocked at this, and called it a terrible operation; Downs closed the vulva with alternate gold and silver rings; Kock and Geddings used quilled sutures, and also removed a strip of vaginal mucous membrane, Dieffenbach supported Downs and opposed Fricke. Malgaigne went deeper into the vaginal canal. Baker Brown was the earliest advocate of perineoraphy. Savage removed a V shaped portion of vagina and used quilled sutures; Sims, a V shaped strip from the anterior wall; Emmet freshens an oval surface in front, and another on either side the cervix, after bringing them together by a suture, he freshens the edges of the folds thus produced and uses interrupted sutures. Hegar prepares an ovoid surface upon the anterior wall and on the posterior wall a triangle with the apex up and the base down, the latter U shaped. He closes with deep and superficial sutures. Simon made a hexagonal denudation and closing by deep and superficial sutures leaves a ridge. Bischof displaces the uterus so that it makes an acute angle with the vagina,—dissects a tongue shaped flap from the posterior wall, then on either side the vagina is denuded of mucous membrane in a triangular piece, from the base of the flap to the middle of the nymphæ, the flap connected with the mucous membrane on either side by sutures leaves a funnel shaped depression to be closed by sutures through the perineum. Winckel diminishes only the lower third, the union of the surfaces representing the letter T. Martin amputates an elongated cervix, denudes an ovoid surface upon the anterior wall which he closes by deep and superficial sutures. The posterior wall is then drawn down and held by ball forceps, the columna is noticed as a prominent ridge in the median line of the tense mucous membrane. This ridge is then circumscribed by an incision and dissected off, the flap thus obtained is allowed to hang down over the introitus below. The denuded surface is covered in by alternate deep and superficial sutures. One side having been operated upon the same plan is pursued upon the other and the vagina is then reduced. The operation is completed by an incision on either side to half the height of the introitus and downward along the edge of the mucous membrane to the median line ending in

front of the anus. The enclosed surface is then denuded and brought together by sutures.

Le Fort observing that old cases of procidentia when reduced began from below by a rolling out of the anterior and posterior walls of the vagina devised the following procedure. He draws down the uterus, has it retained by a tenaculum or vulsella and removes a section of mucous membrane from the anterior wall two centimetres ($\frac{4}{5}''$) wide, beginning near the os and extending to near the vulva about six centimetres ($2\frac{1}{2}''$) long. A similar section is removed from the posterior wall, and the edges brought together so that the freshened surfaces may be in apposition. The sutures are introduced alternately on either side, beginning with those nearest the os, and the uterus is pushed up as they are introduced. He used silk, and as the removal would be attended with difficulty, they were allowed to rot out. This operation forms a double vagina. Tracy modified the operation by restoring the perineum.

The causes of failure in all previous operations have been that they did not elevate the uterus to its normal position and thus facilitate the absorption of hypertrophied tissue and the atrophy which should occur with age. 2nd. They, by affording insufficient support in the upper third of the vagina allow the hypertrophied uterus to sink like a wedge into the narrowed canal and ultimately by the continued pressure to make its way again through the vulva.

These causes of failure are obviated by the plan now under consideration. The uterus is elevated to its normal position and rests upon a bridge of tissue which will not permit the beginning of descent. The vagina with its walls approximated again serves as the primary support of the uterus and with the perineum restored we complete the analogy to nature's support and prevent the possibility of any repetition of the malady.

The advantages of this operation are; its ease of performance, freedom from danger, and if successful, its absolute certainty of relieving the diseased condition. The only drawback to its invariable performance, is that the adhesion of the vaginal walls resulting from it, would greatly complicate delivery, consequently it should not be performed previous to the menopause in women who may be subjected to childbirth.

The notice of the following case will illustrate the operation and its result:—

Mrs. C——, æt. fifty-one, widow, a native of Ireland, of regular habits, entered the Philadelphia Hospital, November 9, 1881. She has had five living children and two miscarriages. The last miscarriage occurred eight years since without cause. Labors were easy, though children were large. She had always enjoyed good health until the third pregnancy. After this she was much debilitated, and did not menstruate for a year after the cessation of lactation. She experienced a sense of weight, pain in the back, etc., indicating prolapse, but it was not marked until after the birth of the fifth child. Her circumstances then became reduced, and she was obliged to work hard. The uterus now became completely prolapsed, but she became pregnant twice afterward. She has suffered greatly from the friction against her clothing and limbs, and from the vesical distress. She continued to menstruate until June, 1881.

The uterus was found outside the vulva and retroverted. Its canal was less than 3″ long. The vagina was completely inverted, thickened, covered with dry, hard, dense epidermis, resembling integument. The bladder covered the anterior part of the mass, and a catheter inserted into the urethra, passed downward. The procident mass was easily reduced, but returned upon coughing, straining, or where the vertical position was resumed.

The perineum was absorbed nearly to the anus, the vulvar outlet dilated and open, and the posterior wall just above the perineum was very thin.

November 19 she was etherized, and the operation performed before the clinic. The surfaces were prepared as has been described, and brought together with wire sutures, the uterus being pushed up. After the vaginal surfaces had been approximated, an incision was made on either side from the base of the posterior section to the middle of the nymphæ, and carried downward, outside the mucous membrane, to the median line in front of the anus, and the enclosed membrane dissected off. This last was closed by four silver-wire sutures. The last was passed through both surfaces of the labium made to catch up the mucous membrane just below the anterior section and through both surfaces of the opposite labium, so that when tightened it brought the anterior wall over the lower part of

the freshened surface, protecting it from contact with the urine, and preventing any tendency to rolling out.

The patient was kept in bed three weeks, the urine drawn by catheter, the bowels kept open. Convalescence was rapid, and unattended by any unpleasant symptoms. Recovery was complete. The perineal sutures were removed on the eighth day, the vaginal not for two months, and then with difficulty. The vagina would admit the finger upon either side. The uterus could be felt per rectum retroverted and much atrophied. The patient, since the operation, has been employed as an assistant in the ward, and, through taking active exercise, has experienced no unpleasant symptoms or discomfort.

SUGGESTIONS REGARDING LEGISLATION FOR THE BENEFIT AND PROTECTION OF THE INSANE.

BY ALFRED T. LIVINGSTON, M. D.

PHILADELPHIA, PA.

I desire to bring to your attention, briefly, a few suggestions regarding the law of this State as related to the insane.

The nature of the disease, insanity, is such as to demand the utmost provision for the proper treatment of the disease as well as the most thorough guarding against the practical assumption of the existence of the disease in an individual not so affected.

These considerations have led to the creation of public as well as private institutions for the treatment of the insane and to the forming of legal statutes governing the admission of such cases to those institutions.

The law at present requires for the admission of an insane person to a hospital for the insane "the certificate of two or more reputable physicians after a personal examination made within one week of the date thereof." The character of the certificate is not prescribed, but custom makes it merely the declaration that the person is insane and a proper subject for hospital treatment.

It would certainly be an additional safeguard to the sane to require that the certificate furnish in itself evidence of the condition; that is, that it relate such a history of the existing condition as would satisfy an intelligent physician that the person is insane.

Another safeguard, and especially strong in connection with what I have just suggested, would be the *separate* examination and certification by each of the physicians certifying. To have the two or more certificates show the same result without pre-

concerted arrangement by the certifiers, would be the most satisfactory demonstration.

There is no provision in the law against the certification by a medical officer of the institution to which a patient is to be committed. While this might not be of importance as related to the public institutions, there can be no objection to this precaution affecting them and it certainly is desirable to have it affect the private class of institutions as to their medical officers or any medical man financially interested in them.

A conspicuous neglect in the existing lunacy law is that of not sufficiently providing penalties for the violation of its statutes, a notable omission being as to the statute requiring two or more medical certificates in committing a patient.

Our State has made extraordinary provision for its insane wards; but in one particular there is a serious omission, viz: in not providing for the custody, treatment and care of the criminal insane and insane criminals separate and apart from the ordinary insane. Penal institutions are certainly not proper places for even the custody of insane persons not to speak of their treatment and care. Consequently the majority of the insane with whom crime is associated are committed to the public institutions for the insane. These institutions are not proper custodial places for certain of this class; nor is it possible in them to make such classification as would separate those who have committed crime from those who are simply sick. Therefore they mingle upon the wards with the most sensitive, modest and pure of the afflicted inmates. The evil effect of this association upon the ordinary cases must be manifest to any thoughtful person.

The provision of the state for the insane who are not self-supporting has been generous and extensive and in character such that the majority of those so provided for have far better accommodations than they are accustomed to at their homes; and they have skillful medical care and experienced supervision.

The self-supporting classes are permitted the use of these institutions to a certain extent and this opportunity is embraced especially by those of limited means, who can meet the minimum or higher rates. For the self-supporting classes of larger pecuniary ability there are corporate and private asylums and hospitals for the insane in which more personal attention and a

better style of living are to be found. These meet the wants of the majority of the self-supporting class of the insane. But there is a large class, especially subject to the nervous and mental forms of disease, in whom we find a marked disinclination to embrace any of the opportunities just related for the treatment of mental cases occurring among them. The popular, though erroneous and deplorable, idea that insanity is in a sense a shame or disgrace, or indicative of family deterioration (rather than simply one of the many *diseases* to which flesh is heir), family pride, the sensitiveness of refinement and culture, the desirableness or importance of avoiding publicity and the objection to association with others mentally affected—are some of the considerations which prevent many insane persons from receiving the prompt and proper treatment their condition demands. The frequent result in such instances is continuance in the midst of improper, irritating and detrimental surroundings until the disease has become confirmed to the extent of violent, suicidal or other marked demonstrations which render their further care at home impossible. Every one of experience with insanity has realized the great importance of *early* meeting the disease with the most desirable conditions of treatment; and I believe that in this respect the demands of the class referred to can only be fully met by adding to the provisions already existing in this country the advantages of the home treatment of the insane, which is but in the initial of introduction here, although it has existed abroad for a considerable time.

Its benefits cannot, however, be advantageously applied without its recognition by law and proper legal restrictions against its abuse. Medical certificates should be required and careful official scrutiny exercised.

This brings me to the final suggestion I have to offer; namely, the importance of legislative creation of an office, the duties of whose incumbent should be the visitation and inspection of all hospitals, establishments, or homes in which the insane are treated and cared for (except their own residences), and the investigation of complaints by or regarding patients of the private class in such establishments, with power to make recommendations to judicial officers in instances of wrongs discovered by him. This office should be held only by a medical man of large practical experience with the insane; he should be required to have no connection with or interest in any private

establishment in which the insane are treated and he should be so salaried as to admit of his making the functions of his office his daily and only business.

I have taken the liberty to bring these suggestions before you, because I believe that in no other way can recommendations affecting the welfare of a large class of the sick be so properly made to the Legislature as by this large association of medical men, representing every section of this Commonwealth.

In view of the infrequent sessions of the Legislature, and the fact that its next session occurs before another meeting of this society; and in view, also, of the great importance of certain of these suggestions, I beg for them your present consideration and such recommendation as to you may seem proper.

ABSCESS OF THE ORBIT.

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PITTSBURGH, PA.

The form of suppurative inflammation which invades the orbital tissues anterior to the fibrous membrane of the lids is not attended with symptoms of any great gravity, and I shall not take up your time in discussing it. Post-ocular abscess, on the other hand, is an exceedingly formidable affection. Happily it is rare. Spencer Watson* says that of 12,692 eye patients treated in the year 1864 at the Royal London Ophthalmic Hospital, but four were diagnosed as orbital abscess. That the disease is at least equally infrequent on this side of the Atlantic is attested by the statistics of special hospitals in New York and Philadelphia. From such numbers as I have had access to of the annual reports of these institutions I find that of 62,623 cases of ocular disease, only six† are recorded under the title which forms the subject of this paper. This infrequency would naturally tend to induce a greater or less degree of unpreparedness for an emergency, which, when it arises, demands immediate and intelligent attention; and it is for this, among other reasons, that I have selected the topic to the consideration of which I desire to invite your attention.

Inflammatory changes, resulting in abscess, may begin either in the cellular tissue of the orbit, or in the periosteum lining this cavity. In most cases, however, the morbid process, once

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* Abscess and Tumors of the Orbit, p. 3.

† These figures do not faithfully represent the relative frequency of abscess of the orbit. In the same reports are mentioned 13 cases of orbital cellulitis, and 14 of orbital periostitis. A proportion of these, impossible to estimate, undoubtedly ended in abscess.

started, extends to the other orbital structures, till at length all may be involved.

The *symptoms* of orbital abscess are variable within certain limits, and depend partly upon whether or not periostitis is the initial lesion, partly upon the type of the disease—whether sthenic or asthenic, and partly upon its duration—whether acute or chronic. In acute sthenic abscess, which is generally of traumatic origin, we observe the disturbances of the general condition, indicative of the febrile state: rigors, elevation of the bodily temperature, rapid pulse, coated tongue, thirst, anorexia, etc.—phenomena which are much less pronounced in the asthenic or chronic form of the disease. The patient complains of pain and tenderness about the eye. The former may amount to agony. The latter is most severe if there is associated periostitis. The lids are red or livid and swollen, and ptosis is very constantly present from interference with the function of the levator palpebræ. There is frequently, even at the outset, some degree of protrusion of the globe, but it may be so slight as to escape observation. As the disease progresses, however, and especially when suppuration sets in, the exophthalmos becomes very marked, so that the eyeballs may be incapable of being covered by the lids. As to the position of the protruded globe authorities differ, some stating that when the areolar tissue alone is involved, the eyeball is generally thrust directly forwards; others, that it is nearly always deviated outwards. The truth probably is that in the rare cases in which the morbid process begins in, and is confined to, the tissues directly behind the globe, the latter is protruded in the direction of the axis of the orbit. As a rule, however, the inflammatory action either arises, or is most concentrated, in greater or less proximity to the inner orbital wall, and hence the eyeball is generally more or less decidedly everted as well as protruded. If the periosteum is first attacked the eye deviates outwards uniformly, or, if there are exceptions to the rule, they are exceedingly rare.

The conjunctiva is red and chemosed and the chemosis may be so extreme that the infiltrated conjunctival tissue may rise up like a wall all around the cornea, and even almost completely overlap it. This condition, together with the swelling of the lids and the œdema of the tissues at the edge of the orbit making the latter ill-defined, as well as the asymmetry

which frequently obtains between the orbital edges and also between the antero-posterior axes of the eyeballs on the two sides, combine to render it difficult to estimate the degree of exophthalmos with accuracy, and hence the several forms of exophthalmometers devised may perhaps be regarded as largely ornamental.

There is usually in the beginning no secretion. At a latter period a slight muco-purulent discharge is established. The cornea, brilliant at first, soon becomes hazy from the drying of the secretions upon it, as well from the action of mechanical irritants in consequence of the inability of the lids to cover the globe. From this latter cause, added possibly to some disturbance of the trophic nerves, there may be corneal ulceration and consequent permanent corneal opacity. The pupil is said by Stellwag* to be contracted and immobile. This is certainly not always the case, although it may be smaller than normal and sluggish, even when the tissues of the eyeball are not involved in the morbid process; in which case the phenomenon might possibly be explained by the fact that the sympathetic nerve filaments which preside over the dilatation of the pupil are less firm, and therefore more obnoxious to pressure and other injurious influences, than the ciliary branches of the oculomotor nerve which innervate the sphincter pupillæ. Excessive lachrymation is frequently present at the outset, but subsequently, if the lachrymal gland be implicated, the secretion of tears may be almost or altogether stopped. Light-flashes are observed. The sight may be unimpaired, though it is usually more or less affected, and the degree of impairment may be so great that little more than light perception remains. The visual field is apt to be contracted. Double vision is not infrequent, and is accounted for by the image of the object fixed by the healthy eye falling upon an eccentric portion of the retina of the other.

On ophthalmoscopic examination the retinal veins are frequently found dilated and tortuous, or there may be serious infiltration of the disc and retina, or even a true optic neuritis. The visual impairment is sometimes explained by the interference with the conductivity of the nerve due to the mechanical stretching of its fibres from the exophthalmos, or to retro-bulbar neuritis. The last-named condition can be diagnosed, if it be

* Diseases of the Eye. New York, 1873, p. 526.

diagnosed at all, only when the resulting atrophy of the disc is made out by means of the ophthalmoscope.* Other causes of blindness are retinal detachment, suppurative irido-choroiditis, and finally panophthalmitis. When the latter occurs, the internal ocular structures are disorganized, the eye fills with pus, and the cornea at last gives way allowing the contents of the globe to escape.

In some cases the ulcerative process progresses to such a degree that spontaneous perforation through the anterior wall of the abscess occurs. When this is about to take place, the conjunctival chemosis is greatly increased, and fluctuation between the eyeball and the wall of the orbit can sometimes be discovered on careful palpation. After the evacuation of the contents of the abscess, whether that evacuation takes place spontaneously or through surgical interference, the eyeball recedes somewhat into the orbital cavity. Pus will continue to escape for a variable period, and then in a favorable case the opening will gradually heal up, the eyeball will resume more or less completely its normal position, and the muscles will recover their functions. In most cases, however, let the termination be never so happy, sufficient proliferation will have taken place to leave a certain degree of protrusion of the globe which will never entirely disappear.

If periostitis, whether primary or secondary, be present, the prognosis is not by any means so favorable. The disease may be protracted by the exfoliation and escape from time to time of laminæ of bone, although most frequently the dead bone comes away in small, almost microscopical fragments; and finally, if the case terminates in recovery, there is great danger of the eyeball remaining immovable, and that even in a false position, owing to adhesions between the globe and the orbital walls. Limitation of mobility may likewise result, whether or not the case is complicated with periostitis, from partial or complete destruction of one or more of the muscles or motor nerve-filaments by the suppurative process, or from interference with the function of the same by the pressure of a firm cicatrix.

But the purulent collection in the orbit does not always seek, or at least secure, a vent in the way we have described. It may, unless surgically provided with an outlet, ulcerate through

* Schweigger, "Handbook of Ophthalmology." Phila., 1878, p. 193.

the wall of the antrum, or nose, or may burst through into the cranial cavity and produce abscess of the brain, a complication which is almost necessarily fatal. Lastly, the inflammatory process in the orbit may be continued through the normal openings into the cranial cavity and result in meningitis.

Although, as a rule, both in the robust and the debilitated, the symptoms of orbital abscess develop themselves with great rapidity, so that in a few days the affection may reach its height, nevertheless there are cases in which the disease progresses very gradually, the characteristic symptoms remaining latent for months, or even years. Mackenzie* relates a case which followed an injury, did not attract attention for four years, and did not urgently demand operative interference for eight years more. The swelling was then punctured, and discharged a considerable quantity of flaky pus. The eye gradually assumed a nearly natural position, and vision was preserved intact.

Etiology.—Orbital abscess may occur at any age. I have seen it in a child only twelve months old.

I. The affection may arise *traumatically*, either (*a*) as a result of accident, as from contused, incised, penetrating, lacerated, and infectious wounds of the orbit, and the lodgement of foreign bodies in this cavity; or (*b*) as a result of operations on the eyeball and its appendages, for example, abscission of the anterior half of the globe†, tenotomy with conjunctival suture for strabismus,‡ discission,§ and depression ‖ operations for cataract, extirpation of the lachrymal gland,¶ the introduction into the lachrymal duct of irritating injections which escape into the surrounding areolar tissue, and operations for the destruction of the lachrymal sac, whether by strong caustics or by the galvano-cautery.

II. It has been induced by exposure to night air, or to cold draughts, and one case is cited by Spencer Watson,** in which it was supposed to be due to exposure to the sun.

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* Diseases of the Eye. Philadelphia, 1855, p. 316.

† Mackenzie, *op. cit.* p. 314.

‡ Desmarres, Maladies des Yeux. Paris, 1854, t. 1, p. 170.

§ *Idem, loc. cit.*

‖ Rognetta quoted by Desmarres, *loc. cit;* also Galezowski, Maladies des Yeux, Paris, 1875, p. 872.

¶ Galezowski, *loc. cit.*

** *Op. cit.* p. 4.

III. It may be a local expression of general tuberculosis,* or especially if it begin as periostitis, of scrofula or syphilis.

IV. It may occur metastatically, or as a sequela of severe constitutional diseases, as pyæmia, puerperal fever, erysipelas, phlebitis, glanders, small-pox, scarlet fever, and even pleurisy.†

V. It may be produced by the extension of the inflammatory process from surrounding parts. Thus purulent periorbitis invariably culminates in orbital abscess. Suppurative panophthalmitis, dacryocystitis, gonorrhœal conjunctivitis,‡ and erysipelas of the face and scalp may terminate similarly. Affections of the bones in the neighborhood, and of the zygomatic and pterygo-palatine fossæ, may lead to its development, and the disease may arise in the course of an attack of purulent meningitis § from the inflammation passing through the orbital fissures to the areolar tissue of the orbit, or, as Schweigger explains it, "owing to the anatomical connection which Schwalbe has shown to exist between the arachnoidal space and the lymph-spaces which surround the external sheath of the optic nerve, and pass over into Tenon's space."‖ When the disease is caused in this manner, numerous small suppurating points are sometimes found diffused throughout the connective tissue.

VI. Lastly, purulent collections in the adjoining bony cavities, the frontal and ethmoidal sinuses, the antrum of Highmore, and the cranial cavity, sometimes ulcerate through the orbital wall and give rise to the disease under consideration. In perhaps most of the cases in which disease in the antrum results in orbital abscess, the primary cause is dental caries. In one case the symptoms rapidly subsided on the extraction of a decayed tooth, to the fang of which a splinter of wood was attached, and projecting into the antrum.¶ A case is related by Fischer,** which is a remarkable illustration of the saying, "How great a matter a little fire kindleth!" A young

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* Fischer quoted by Stellwag, *op. cit.*, p. 527.

† Galezowski, *loc. cit.*

‡ Middlemore, Diseases of the Eye. Lond., 1835, Vol. II., p. 584.

§ In one such case reported by J. W. Ogle (*Path. Transactions*, Vol. IV. p. 25), the cerebral disease had its origin in a suppurative inflammation of the middle ear.

‖ *Op. cit.*, p 191.

¶ Spencer Watson, *op. cit.*, p. 17.

** Quoted at length by Mackenzie, *op. cit.*, p. 317.

man in good health, but given to drink, had a left upper molar extracted on account of toothache. This simple operation was followed by redness, swelling and pain in the left side of the face. These symptoms were succeeded by epiphora, photophobia, swelling of the lids, chemosis of the conjunctiva, protrusion and immobility of the globe, lancinating pain in the head, rupture of the cornea with prolapse of the iris, and finally, fluctuation at the inner angle of the eye. A quantity of greenish-yellow matter was evacuated on puncture, with only temporary relief. Somnolence, slowness of the pulse, vomiting, convulsions and other cerebral symptoms supervened, and death took place after an illness of little more than three weeks. The antrum was found full of pus. The floor and roof of the orbit were friable and perforated. The cerebral substance was softened, and its ventricles filled with pus and bloody serum.

Diagnosis.—In view of the gravity of the disease and the necessity for prompt and decisive treatment, in order to the preservation of vision, and even life itself, the importance of a correct diagnosis can scarcely be overestimated. What then are the pathological conditions which may simulate orbital abscess, and what are the considerations to be regarded in endeavoring to establish a differential diagnosis?

In the acute form of the affection not much difficulty will generally be experienced. In the incipient stage, indeed, when there is as yet no notable displacement of the eyeball, it may be mistaken for *purulent ophthalmia*. The absence of secretion in the former affection, however, will be a trustworthy sign. When the eye is protruded, the danger of confounding the disease with *serous effusion* due to phlebitis of the ophthalmic vein is much diminished by remembering that in phlebitis, while there are exophthalmos and œdema, other symptoms of abscess such as redness, heat, and swelling of the external structures are absent, and moreover the eyeball always retains its mobility. When the effusion is associated with thrombosis of the cavernous sinuses, as in the cases related by Knapp* and others, the eye is immovable, but then there are marked signs of intra-cranial mischief, and besides the exophthalmos is frequently bilateral. A typical case of this kind I saw at the Western Pennsylvania Hospital through the kindness of my

* Archiv f. Ophth. B xiv, abth. 1, s. 220.

friend Dr. Asdale. Unfortunately no autopsy could be obtained. The cases of suddenly developed *anastomotic aneurism* in which the pulsation and the characteristic *bruit de souffle* are lacking, are exceedingly rare, and yet surgeons known to fame have been rewarded for an incision into a supposed orbital abscess only with an ominous gush of arterial blood. Several such cases are recorded,* in one of which the aneurism was punctured five times. The carotid was at length ligated with a good result. But on the other hand arterial blood is not always evidence of aneurism.

A surgeon at the Royal London Ophthalmic Hospital plunged a knife into a swelling presenting every appearance of abscess. The incision was instantly followed by a spurt of bright red blood, which issued *per saltum* to such a degree that preparations were begun to tie the carotid. The hemorrhage, however, was checked by cold and pressure, and the case terminated as ordinary abscess of the orbit.† The pathological condition under consideration can be differentiated from the form of cellulitis described by O'Ferral,‡ in which the inflammatory action is confined to the interior of the tunica vaginalis bulbi, by the fact that in the latter the protrusion of the globe is always in the direction of the axis of the orbit; and furthermore, the swelling and redness of the upper lid is strictly limited to its tarsal portion.

But it is when abscess of the orbit assumes a decidedly chronic form that mistakes in diagnosis are most apt to occur. In such cases pronounced inflammatory symptoms may not be present, and the first, and perhaps the only condition to attract attention, may be the exophthalmos. This symptom may be produced by ophthalmoptosis or paralysis of the ocular muscles, by varicosity of the orbital veins, by morbus Basedowi or exophthalmic goitre, by a morbid accumulation of the fatty cushion on which the eyeball rests,—a condition which must not be confounded with Desmarres' *Hypertrophie du tissue cellulo-adipeux de l'orbite*, the latter being simply exophthalmic goitre,—by solid tumors, chiefly malignant, and, finally, by cystic tumors.

Paralytic and varicose exophthalmos can be distinguished by

* Medico-chirurg. Transactions, Vol. XLII., p. 168, also, S. W. 5 or Dem.

† Mackenzie, *op. cit.*, p. 316.

‡ *Idem*, p 319.

the fact that by pressure on the eyeball, particularly while the patient is supine, the protrusion can be made to sensibly diminish or disappear. In Basedow's disease the enlarged thyroid gland and the general anæmic state will usually prevent errors in diagnosis. Malignant tumors can in general be excluded by the absence of glandular involvement, of enlarged superficial vessels, of the cancerous cachexia, and of other familiar signs of malignancy. And yet cases like that of the Count Radetsky, reported in the "*Bulletin de Académie Royal de Médicine de Belgique*" (quoted by MacKenzie, *op. cit.*, p. 316), show that certainty is not always attainable. Professor Jaeger appeared to agree with the other medical attendants that the patient was suffering from a cancerous tumor. However, the case was happily decided by the bursting of the abscess, for such it was. A skillful surgeon of large experience, who saw one of my cases within twenty-four hours after nearly two drachms of pus had been evacuated by operation, was with some difficulty convinced that he was not looking at a scirrhous growth. But of all orbital affections accompanied by exophthalmos, cystic tumors are the most likely to be mistaken for chronic orbital abscess; and, while it is true that the position of the eyeball is of some diagnostic value, cysts very frequently, and abscess very rarely, thrusting the globe either downwards or upwards in the median line, the nature of the case can often be definitely ascertained only by resorting to the exploratory puncture. In point of fact, this procedure ought to be adopted in any case of doubt. Notwithstanding the assertion of Lawson,* no serious consequences are to be apprehended, due caution being observed, if the disease should turn out either aneurismal or malignant; at least none that can for a moment be compared to the usual results of leaving an orbital abscess unopened.

The operation is best performed, not with an exploring needle or a slender-bladed knife, as are commonly recommended, but with a fine aspirating needle. In withdrawing either of the former, any pus into which it may have been plunged, is exceedingly apt to be wiped off by the overlying tissues; while by employing the aspirating needle, and especially by exercising some suction force with the aspirator, sufficient fluid, no matter how thick it may be, will be drawn into

* "Injuries of the Eye." Philadelphia, 1867, p. 342.

the needle to determine the nature of the affection. In this connection a suggestion may be made, which I know from experience to be of great practical importance. Care should be taken not to remove with the aspirating needle any more pus than is required to settle the diagnosis, because the tension may thereby be considerably diminished, and the difficulty of the subsequent evacuating incision be thus greatly enhanced.

Treatment.—If the patient is seen early enough, and the inflammation is of a very violent type, with bounding pulse, high fever and great swelling of the lids, an attempt may be made to secure resolution by the application of ice all round the region affected, and by repeated leeching in the temporal region or over the mastoid process. At the same time the patient must be kept perfectly at rest, and the diet must be light and easily digested. Cooling drinks must be given, and small, but frequently repeated doses of aconite, with sufficient opium to control pain. The bowels must be kept open, and free action of the skin and kidneys secured. In other words, the antiphlogistic regimen must be followed. As a general rule, however, the type of the disease is asthenic, and, of course, violent depletory measures would be highly improper. In such cases we must be content with milder, and, to a large extent, expectant methods. Emollient applications ought to be used; and tonics, particularly quinine and iron, and nutritious broths, beef tea, etc., should be administered. If there is reason to suspect the existence of periostitis, iodide of potassium or iodide of iron may be exhibited.

Whenever there is the slightest appearance of suppuration, whether fluctuation can be detected or not, an incision should be made into the diseased tissue and the purulent collection evacuated. The incision may be made with a bistoury, or, if fear is entertained of wounding any of the important extra-ocular orbital structures, the method suggested by Bryant may be followed, namely, to first make with a knife an opening through the superficial tissues, and then dissect a passage into the cavity of the abscess with a groove-director. After entrance is thus effected, Bryant inserts the closed blades of a dressing forceps, then forcibly opens them, and keeping them open, withdraws them. He claims, probably with justice, that the wound thus made is not so apt to close too soon as a clean incision. Once the globe is markedly protruded the operation

should not be long delayed. The tension generally very great is at once relieved, and serious danger, both to the eye and to the life of the patient is thus obviated. The incision should be about an inch in depth, and the knife should be inserted with its plane parallel to the orbital wall, but with the edge slightly turned away from the eyeball, since on more than one occasion the eye has been destroyed by the operation. The place selected will depend on the position of the globe. If the latter is protruded directly forwards, the knife may be entered just above it. If the eye looks downwards and outwards, as is usual, the incision will be in the upper and inner orbital region, etc. The knife is generally inserted through the conjunctiva, first elevating the upper lid so as to expose the conjunctival *cul-de-sac*. Some authors, however, prefer to operate through the lid close to the orbital margin.

After the incision, an attempt should be made to determine the presence or absence of periostitis or caries of the orbital wall. To this end the pus should be examined chemically and microscopically as suggested by Walton. The pus from diseased bone is acrid, thin and fetid; and phosphate of lime is found in appreciable quantities. The cavity of the abscess should also be explored with a probe; but the utmost caution must be observed in probing the orbits of young children, since in them "the orbital periosteum is almost in contact with the dura mater."* If the track is long and there are any doubts as to its keeping open, it is well to insert a tent of oiled lint or a small perforated rubber tube. Poultices should be applied, and gentle pressure instituted and maintained by the use of a compress bandage preferably of flannel on account of its elasticity. The subsequent treatment will be conducted on ordinary surgical principles. If there are decided evidences of necrosis, care must be taken not to allow the opening into the cavity to close up too readily; and mild astringent or antiseptic solutions may be injected daily with advantage. It may be added that if there is a reason to believe that a foreign body is present in the orbit, careful search should be made with the probe, and if the offending substance is found, it should be promptly cut down upon and removed.

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* De Wecker, "Ocular Therapeutics." Lond. 1879, p. 502.

A COMPARATIVE STUDY OF THE ACTION OF CERTAIN MYDRIATIC ALKALOIDS.

By EDWARD JACKSON, A.M., M.D.,

WEST CHESTER.

The natural mydriatic alkaloids, atropia, daturia, duboisia, and hyoscyamia, constitute a group of drugs sharply characterized by powers which render them therapeutically important. Briefly, power over the actions of certain parts of the eye, of certain glands, and of various parts of the nervous system. Now, variety of physiological and therapeutic power is not always of advantage. The cases in which all these are equally indicated are few, compared with those in which it is desirable that the drug should act in only one direction. We would often like to check sweating without drying the throat. The affection of the central nervous system is an inconvenience when it attends mydriasis. Now, does one of these drugs manifest one of these actions with especial strength, while in a second some other tendency is more markedly developed? In any special case is one indicated rather than another, or are they to be used indifferently?

Except, perhaps, the single case that duboisia is superior to atropia for certain ophthalmic uses, the question finds no generally accepted answer.

The close chemical relation between these alkaloids seems to be pretty well agreed upon. Each may be represented by the formula $C_{17}H_{23}NO_3$. With most re-agents they give the same re-actions. On the other hand, while atropia is said to be optically inactive, Petit has stated that duboisia "rotates the plane of polarization to the right," Poehl finds that daturia "turns polarized light to the left," and also that while "atropia salts are precipitated by platinic chloride, those of daturia are not,"

and that "picric acid precipitates daturia, but not atropia." Professor Landenburg, of Kiel, further points out certain differences between the gold salts of atropia and daturia, and asserts that in all respects duboisia and hyoscyamia behave like daturia. That chemically there are but two natural mydriatic alkaloids, atropia, and daturia with its equivalents. My paper is to lay before you a comparison of physiological actions of daturia, duboisia, and hyoscyamia.

The samples used were the preparations of E. Merck, of Darmstadt, and H. Trommsdorf, of Erfurt, purchased of George I. McKelway and Moritz Eisner, of Philadelphia, and are probably as good specimens of the crystalized alkaloids as can be obtained in the general market. They were always exactly neutralized by sulphuric acid, and used in fresh solution prepared in parts by weight. A weighed quantity of each solution was always used, except for dropping in the eye, in which case the same dropper was always employed, and every precaution taken to get drops of a uniform size.

At this time and place any minute or comprehensive account of the physiological action of these drugs is of course out of the question. I shall only notice some of the phenomena most readily comparable; phenomena that we may, so to speak, estimate quantitatively as well as qualitatively.

First, let me give you the barest outline of the effects produced on frogs. When an amount of the alkaloid equal to $\frac{1}{5000}$ of the frog's weight is placed in its body by means of the hypodermic syringe, an indisposition to move and a general moderate paresis become evident within an hour or two.

These begin to pass off toward the end of the first day, and in another day the animal seems restored to perfect health. If the amount of the alkaloid used be about $\frac{1}{1000}$ of the frog's weight, the symptoms beginning as above but more quickly, go on increasing until in three hours, or less, there is complete cessation of voluntary motion, and an abnormally severe stimulus is required to call forth even the least reflex muscular contraction. After some eighteen hours or rather less, a tetanic condition begins to become manifest, and becoming gradually more marked, closely simulates that produced by strychnia poisoning.

This may lead to death at the end of the first or during some subsequent day, or about the same time improvement may begin and go slowly on to complete recovery. In twelve experiments,

four with each drug, the alkaloids under consideration all seemed equally competent to cause the train of symptoms thus described.

In some trials on my own person, I took hypodermically $\frac{2}{3}$ of a milligramme ($\frac{1}{100}$ of a grain) of one of the alkaloids some thirty to fifty minutes after dinner, and spent the succeeding two hours mostly in the recumbent posture. The symptoms noticed were: First a feeling of slight exhilaration, like that occasioned by a small amount of some alcoholic beverage. This soon changed to a moderate sense of giddiness and confusion, with a feeling of inability to control muscular action particularly of the legs. These symptoms became quite unpleasant on attempting to stand or walk. There was an early decrease in the pulse-rate quickly followed by an increase that carried it above the normal. In from thirty minutes to an hour dryness of the mouth and throat appeared and became very unpleasant.

During the second hour the pupils became slightly dilated, and the power of accommodation slightly lessened, while the giddiness was replaced by headache. In from four to six hours the dryness of the mouth and throat, with the accompanying hoarseness of the voice, were passing off with the secretion of very tenacious mucus. The headache persisted until I retired for the night, sleep was normal, and by next day there remained but a portion of the effect produced on the eyes, and this had entirely disappeared a day later. Remaining quiet after dinner usually causes drowsiness; this drowsiness seemed not to be affected by any of the drugs. Three to five hours after taking the drug the secretion of urine was somewhat more abundant than usual, and pretty active exercise was unattended by sensible perspiration.

These symptoms were all observed with each drug. I thought they seemed rather the least severe with daturia, and the most severe with hyoscyamia; such was certainly the case with regard to the affection of the eye, which, with the pulse-rate, is a quantitative test more to be relied on than any purely subjective symptoms. The record of the pulse-rate is shown in the following table, sixty-six beats per minute being the normal rate when lying down:

Drug used.	Time after taking, in minutes.					
	5 m.	10 m.	20 m.	30 m.	60 m.	120 m.
Daturia, . . .	66	59	64	69	70	66
Duboisia, . . .	66	58	68	72	69	66
Hyoscyamia, . .	66	58	66	75	68	66

being the maximum of dilatation that any mydriatic can produce.

Each division of the horizontal lines (marked above or below by the Roman numerals) stands for one day. The lower set of curves give the power of accommodation remaining or restored at the various times indicated. For them the divisions of the vertical lines (numbered on the left from below upward) each represent one dioptric; that is, a portion of the power of accommodation equivalent to convex lens with a focal distance of one meter; my total power of accommodation being about nine and three-quarters dioptrics.

The descent of the lines representing the dilatation of the pupil and weakening of the accommodative power is noticeably abrupt. This results from the use of a time-scale, which allows such a short horizontal space to the time occupied by these processes. On a scale allowing them more space these descending lines were well-marked curves, with the concavity upward. The scale used was chosen in order to include the whole of the curves. In the curves representing the diameter of the pupil, will be seen a short horizontal portion, showing that for some hours the pupil remains apparently unchanged at the maximum of dilatation. The accommodation never became completely paralyzed, and no such portion appears in the lower curves. These diagrams present more readily and clearly than could any words or numbers the main results of these experiments; but a few points are better shown by tabulating them thus:

Average of results for	Daturia.	Duboisia.	Hyoscyamia.
Pupil perceptibly dilated,	22 m.	22 m.	21 m.
Pupil fully dilated,	103 m.	81 m.	65 m.
Accommodation perceptibly weakened,	22 m.	22 m.	23 m.
Greatest weakness of accommodation,	4⅔h.	4⅓h.	4⅔h.
Recovery complete,	6 d.	6⅓d.	6⅔d.

The meanings of the letters in the table being m. minutes, h. hours, and d. days. It is to be noticed that so far as could be judged, the complete recovery of the pupil and of the power of accommodation were exactly simultaneous.

Now, in estimating the significance of the results obtained, certain facts should be borne in mind. First, No matter how accurately a solution may be prepared, no matter how exactly

we may know the quantity applied to the conjunctiva, the instant that it is so applied it is diluted by a variable amount of lachrymal secretion, and it enters the anterior chamber by the variable channel of absorption through living tissues. So the amount reaching the iris and ciliary body and the rapidity of reaching them must always be liable to variations.

When the curves here exhibited are compared with curves, showing the results in single experiments, I find that there is less difference between the average daturia curve and the average hyoscyamia curve than there is between the curve of one daturia experiment and the curve of another daturia experiment; that is, the results of single experiments with any one of the drugs, differ more than do the average results for different drugs. When the result of each experiment is but a rude approximation to a mean that is sought, the average of any limited number of such results is but a somewhat nearer approximation, and not the mean itself. So that the above daturia curve is not the exact mean curve for that amount of daturia placed in my eye, but only an approximation, and the same is true of the duboisia and hyoscyamia curves. Bearing these things in mind, making the proper allowance for variations that are inseparable from all physiological experimentation and its results, it seems to me that this comparative study of the action of these alkaloids points to this conclusion:

Daturia, duboisia, and hyoscyamia are physiologically identical.

Let me add that this view is supported by a considerable clinical experience with duboisia and a more limited clinical acquaintance with daturia and hyoscyamia.

SUBJECTIVE TRAUMATISM OF THE EYE;

ITS IMPORTANCE WHEN THE QUESTION OF SYMPATHETIC IRRITATION OR SYMPATHETIC OPHTHALMIA ARISES.

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Traumatism of any part or organ of the body, strictly speaking, is limited to the damage inflicted by external objects or foreign substances, whether by mere contact or penetration. Traumatism can also occur by parts adjacent producing some form of injury to a part or organ of the body.

Yet a part or organ of the body, especially the latter, can be damaged by conditions limited to itself, which are as serious in character or modify the value of the part or organ, as any damage that can be produced by sources external to it. Traumatism can be considered then as occurring both objectively and subjectively.

The visual organ of the body presents these two forms of traumatism for consideration and treatment.

Objective traumatism of the eye, includes not only the damage done by blows and wounds to the eye from penetration by foreign bodies, loss of substance by irritants, and from inflammatory processes occurring in parts adjacent, but also the neo-plastic growth, and diseased condition developing in the eye from general or specific disease in other portions of the body; including the reflex irritations by which vision is impaired, lost, or the organ destroyed; with or without sympathetic irritation or sympathetic opthalmia of the other eye.

Subjective traumatism of the eye is better to be restricted to the diminution of sight, and diseased condition of the tissues of the organ resulting from optical defects or ametropia; which

includes hypermetropia, myopia and the varied forms of astigmatism. On account of the necessity of immediate relief from objective traumatism of the eye affected, and dread of sympathetic irritation or sympathetic ophthalmia of the other eye, its consideration has become chronologically of first importance.

Then ophthalmic surgery has been longer practiced than ophthalmic medicine, and correction of optical defects by glasses; so that it has been longer understood.

The danger to vision of both eyes from this form of traumatism, the methods of procedure therapeutical and surgical, are fully known.

The statistics of ophthalmic hospitals and ophthalmic work in general hospitals in the leading cities of the United States afford the following: Of 107,383 eye cases, 19,037 required surgical procedures, of which 862 were enucleation of the eye for some of the many forms of objective traumatism; principally on account of the dread of or presence of sympathetic irritation or sympathetic ophthalmia of the other eye; some for intra-ocular conditions and a few for cosmetic purposes.

Thus 17.7 per cent. of ophthalmic work is operative, and 4.5 per cent. is enucleation of the eyeball. This percentage for the operation of removal of the eyeball should be higher than the statistics derived from the public clinics, as this class of cases are more apt to seek private advice.

The importation of artificial eyes is about ten thousand annually, and recently the manufacturing of them has become a home industry.

Subjective traumatism of the eye has been appreciated at a later date than objective traumatism and the ills that are produced by it, as the abuse and damage to the eye from optical defects has been made known by statistics of many observers published from time to time.

For while the results of objective traumatism of the eye are justly dreaded and of first importance to understand; still the number of cases affected by it are so much less numerous than those undergoing the ills of subjective traumatism continually, that it is logically proper for it to be given full consideration.

The damage to the eye from progressive myopia longer known than the more numerous ill effects on vision and the tissues of the eye due to hypermetropia needs no narration at this date.

It is the unnecessary action of the vascular muscular tissue

of the eye, consisting of the choroid, ciliary body and iris, that produces subjective traumatism.

On the outer side of the choroidal portion are the ciliary nerves, having a varied function to perform; underneath the choroid is the prolongation of the nerve of special sense, the retina; only physiological action should occur in all these. The ciliary body inserted into the cornea at its base and surrounding the crystalline lens has a given function to perform. The iris has its physiological action.

The three divisions of this muscular vascular tissue should be considered as one, and it is damaged far more frequently, though less rapidly and severely, by unnecessary action or irritation which congests and hypertrophies it, or attenuates and atrophies it, with the accompanying irritation of the ciliary nerves on the outer side moving against the firm, hard sclerotic and the impairment of the function of the retina on the inner side of the choroid; while the crystalline lens is also impaired by unnecessary movement of the ciliary muscle, which also modifies the corneal tissue, and the irritation from the iris by this action has its effect also; than the same tissue and parts adjacent suffer from the objective form of traumatism.

The emmetropic eye, theoretically, should be free from subjective traumatism. They should be considered healthy, and when diseased suffer less than ametropic eyes, and yield more readily to treatment, from the fact that there is no unnatural action to overcome, they being in a state of rest, all the parts working physiologically.

Do we go too far when we say such eyes being affected by objective traumatism repair more rapidly, are less liable to produce sympathetic irritation in the other eye, it being emmetropic? Is sympathetic ophthalmia to be less dreaded in emmetropic eyes than in ametropic ones?

The emmetropic eye is free from the conditions that occur as the result of subjective traumatism and should only be liable to the danger of objective traumatism.

Dr. Risley states in his report read before this Society last year, on Weak Eyes in the Public Schools of Philadelphia, that he only found 12.28 per cent. emmetropic. Under ametropia, 19.33 per cent. myopic; 66.84 per cent. hypermetropic. Drs. Derby & Loring, New York, emmetropic 60.97 per cent.; myopic 26.78 per cent., hypermetropic 12.29 per cent. Dr. Erismann, St.

Petersburg, emmetropic 21 per cent.; myopic 42.8 per cent.; hypermetropic 36.2 per cent. Dr. Risley also states that 20 per cent. of the emmetropic eyes showed signs of pathological change or subjective traumatism; this percentage is higher than I should expect and shakes somewhat the belief in the capabilities of the emmetropic eye being free from subjective traumatism; but 80 per cent. do remain so according to his statistics.

He states under ametropia, that 50 per cent. of the hypermetropic eyes were unhealthy; that 76 per cent. of the eyes with hypermetropic astigmatism were unhealthy; of the myopic eyes 82 per cent. were unhealthy; those with myopic astigmatism 87 per cent. were unhealthy.

Accepting these statistics there is only 80 per cent. of the 12.28 per cent. of emmetropic for objective traumatism to act upon alone.

A much wider field under ametropia for both subjective and objective traumatism to act upon; a percentage that supplies a large material for physicians to deal with and in which field much real good can be done.

The perusal of such papers as Dr. Risley's and others in the same line cannot help but be productive of good.

It is not my purpose to dilate further upon the title of my paper, to narrate how optical defects of one form or the other lead to severe ocular lesions, almost as dangerous as those inflicted by the many sources of objective traumatism.

I desire rather to call your attention to what might properly be called a third form of traumatism which eyes may undergo; the subjecto-objective or objecto-subjective.

For the percentage of eyes affected by subjective traumatism is so large and that for objective traumatism only to act so small; that we have to deal in practice with both forms and have a double line of action to follow in doing justice to those cases that present themselves apparently suffering from objective traumatism alone.

Experience will convince one that the emmetropic eyes are the healthy ones, when diseased yield readily to treatment; are the ones where simple conjunctivitis exists, do not need much treatment, and do not run into chronic conditions, are not liable to develop trachomatous patches in the conjunctival tissue; they are free from the phlyclenular inflammations, if they assume the purulent or gonorrhœal or diphtheritic form

of conjunctival inflammation do better than the same conditions occurring in myopic or hypermetropic eyes, though here specific conditions exist that may be as fatal to sight, as a person of perfect development and health may die from a specific form of disease.

Recurrent iritis is less frequent in emmetropic eyes. True senile cataract occurs in emmetropic eyes. Surgeons are now asking the question where are all the cataracts that were formerly at hand. Is the scarcity to be accounted for by the work being divided among more operators, or is it to be accounted for by the correcting of optical defects stopping the abuse of the crystalline lens and thus diminishing the number of cataracts not strictly senile? The glaucomatous eyes are hypermetropic with few exceptions.

The picture of progressive myopia is absent in emmetropic eyes.

The necessity of correcting optical defects in diseased eyes is as essential as it is to give quinia to a syphilitic patient dwelling in a malarious region and affected by it, if you desire your treatment of the syphilitic symptoms to progress rapidly and end successfully.

If this correction of optical defects is so essential in rendering ocular therapeutics successful, it becomes far more important in recognizing it before surgical measures are adopted and making the same after operations have been performed. The requirement of this after cataract operation has long been appreciated; after operation for iridectomy the cornea changes its shape, and the correction of pre-existing optical defects combined with the one later developed must be made or freedom from such defects ascertained. One eye being injured objectively, the other eye free from any sympathetic irritation, the injured eye rendered defective in vision, but repairing rapidly and remaining free from irritation, I have often, correcting what optical defect may exist in each eye, rendered my patient a valuable service in the future work of his eyes, and given freedom from the ocular strain with its numerous symptoms about the head; if the eyes are emmetropic they experience no such trouble.

But where subjecto-objective traumatism is principally to be considered is where the question of sympathetic irritation or sympathetic ophthalmia arises and the enucleation of the

objectively traumatized eye is thought advisable or required, to protect the other eye.

The question to be decided is: is the eye that is sought to be protected emmetropic, and the symptoms present those of sympathetic irritation or sympathetic ophthalmia; or is it ametropic, and its symptoms due to the optical condition or subjective traumatism; or do you recognize symptoms of sympathetic irritation or ophthalmia plus the optical defect?

If the uninjured eye is emmetropic or ametropic, and presents symptoms of sympathetic irritation or ophthalmia, the enucleation of the injured eye is imperative. If the uninjured eye presents only the symptoms due to subjective traumatism or optical defects, why enucleate the injured eye? Correct the optical defects, and these symptoms will disappear. The injured eye may be enucleated for cosmetic purposes, but the diagnosis in the uninjured eye should be made out, and the glass to correct the optical defect worn.

An eye being enucleated for the protection of the other, if it is emmetropic, no optical measures are necessary, except that for presbyopia, if the age of the patient has attained the necessity of it.

If the remaining eye is ametropic in addition to the symptoms of sympathetic irritation or sympathetic ophthalmia, the correction of the optical defects is necessary, and will hasten the disappearance of all unpleasant symptoms, thus relieving both forms of traumatism.

By these remarks I do not intend to assert that many eyes have been removed unnecessarily; for it is one of the most difficult things to get your patients to assent to this operation, a true case of sympathetic irritation or ophthalmia being made out. I wish to raise, however, a point of differential diagnosis, so as to know all the conditions present before the operation is resorted to, and after it is done give all the treatment that is required. The differential diagnosis between the symptoms in an eye suffering from sympathetic irritation or sympathetic ophthalmia due to the objective traumatism in the other, and the symptoms in an eye annoyed and irritated by subjective traumatism or optical defects, the other eye being objectively traumatized, or the symptoms of both forms of trouble in one eye, the other being injured, is readily made if the proper means are employed.

The ophthalmoscope is the most useful means, as by its use you can recognize the picture belonging to the one condition or the other condition, or both combined. The testing of vision and seeing if glasses are essential to perfect sight, the ciliary muscle being purposely paralyzed, is the next best means; for if full vision is attained by them and preserved, you know the nerve and retina are not involved. The dread of light, blepherospasm, congestion of the ocular conjunctiva, modified action of the pupil, loss of vision in extent and field, are among the leading symptoms of which the patient complains, and you readily observe which points to sympathetic irritation or ophthalmia existing, and which gives rise to the whole question. The optical defects have always existed; the symptoms of irritation or sympathetic ophthalmia have arisen since the other eye was injured.

The location of the injury on the eye objectively traumatized, enables you also to decide as to the possibilities and danger of trouble in the other one. If only the cornea, iris or crystalline lens, the risk is hardly to be considered, especially if appropriate treatment is applied; if the ciliary body, choroid, retina or vitreous is invaded the question of enucleation becomes important and is imperative to protect the other eye. Mauthner's work on the Sympathetic Diseases of the Eye, recently translated, presents the subject ably and up to date. English and American surgeons, however, have found less trouble in the treatment of this class of cases, than the Germans.

I have thought this subject sufficiently important to introduce in a society of general practitioners, for outside of large centres of population these cases of ocular traumatism are first seen by them; it is also a subject of first importance in ophthalmic surgery, in which certain facts have to be known or conditions observed, so as to know what really exists.

The importance of subjective traumatism of the eye in cases where one eye is injured by foreign bodies or elements, the other being troublesome, was first brought to my attention several years ago in the case of a patient who had already prepared for the enucleation of an eye, from supposed sympathetic irritation or ophthalmia in the other eye; loss of vision being the principal symptom; the irritation was, however, only that of subjective traumatism, the optical defect was corrected and no enucleation of the other eye advised as only the

symptoms of subjective traumatism were present. The same plan has been adopted when only these symptoms were present in this class of cases since; they are few and far between, it is true. Where enucleation is resorted to for the symptoms of sympathetic irritation or ophthalmia all optical defects are corrected in the remaining eye.

To my paper I add cases in illustration of the points raised as have occurred in the Eye Department of the Jefferson Medical College Hospital under the observation and treatment of Professor William Thomson, Ophthalmic Surgeon to the hospital, and those who have been under my care in the same institution and a few from my private case book. They are arranged and classified as follows :—

SYMPATHETIC IRRITATION OR SYMPATHETIC OPHTHALMIA. ENUCLEATION ADVISED OR PERFORMED—OPTICAL DEFECT CORRECTED IN UNINJURED EYE.

Case I.—W. H. L., male, 33, Pa. Jeff. Med. Coll. Hospital, June 4, '77. Left eye lost by inflammation from the eye being scratched by another child when he was an infant—has been wearing an artificial eye over the shrunken globe. The right eye was painful twenty years ago; been so off and on since; vision impaired.

R. E. v= $\frac{20}{L\,xx}$ L. E., no perception of light.

Ophthalmoscope showed a serious lesion in choroid and retina of R. E. near the fovea, the size of this equalled the size of the optic nerve itself and produced a large central scotoma. Professor William Thomson removed the shrunken left eye, and treated the lachrymal apparatus which had been irritated by the artificial eye worn over the eyeball. The right eye was corrected with a—14 cyl. ax. 90° to attain the best vision—full vision was impossible on account of the change in the retina. The eyeball removed contained a bony substance.

Case II.—L. H., female, 22, N. J. Jeff. Med. Coll. Hospital, Dec. 5, '79. Left eye lost when five years old from severe kerato-iritis. Right eye troublesome five months ago—photophobia, lachrymation.

R. E. v=$\frac{20}{xx}$ poorly, duboisia $\frac{20}{xL}$+48 cyl. ax. 90°=$\frac{20}{xx}$

Dec. 11, irritation still existing, Professor William Thomson removed the shrunken eyeball. It contained bony mass. Since then no trouble.

Case III.—J. W., male, 35, Pa. Sept. 7, '78. Right eye received injury from piece of steel or stone while hammering, wound at sclero-corneal margin outer side, vision lost after two hours, pain several hours after, consulted doctor, two weeks an invalid, eye red and irritated for two months, till five years ago could see better with the injured eye than the other one (the left) it being myopic. The injured eye has been more troublesome two or three times yearly, four weeks ago, pain severe, vision worse still. Present condition R. E. Tension—3. Pupil displaced and iris caught in corneal wound at time of injury and became adherent and fast in cicatrix—pupil dilated slightly under atropia, cornea clear, except near line of cicatrix, vitreous hazy and lens dislocated or absorbed; as observed with the ophthalmoscope; a+12 helped vision.

L. E. atropia v^{10}_{c}=—18⌒—36 cyl. ax. 90°=$^{20}_{xxx}$

The optic nerve was red and showed sign of irritation.

Enucleation was advised for the right eye and the glass given for the optical defect in the left one—he refused immediate operation, not seen since, if he has had no further trouble, it is due to the freedom of strain in the left eye—but the case was one of proper condition to enucleate the injured eye for the protection of the other one.

Case IV.—T. F.W., male, 26, N. J. Jeff. Med. Coll. Hospital, March 10, '80. Vision in left eye failing gradually for eleven years, at first foggy, then finally vision lost, six months ago, eyeball enlarged in the ciliary region on the nasal side gradually increasing in size.

Two weeks ago the right eye became foggy, light irritated it. R. E., v=$^{20}_{xx}$. L. E., no perception of light, sarcoma of choroid. I removed the eyeball (L. E.) the same day. Afterwards I corrected the optical defect in the right eye.

R. E. duboisia v=$^{20}_{cc}$+24⌒+60 cyl. ax. 90° $^{20}_{xx}$

Case V.—W. S., male, 49, Pa.

Nov. 22, '82. Left eye injured by fork penetrating it when a small child.—Irido-cyclitis followed—cataract,—anterior staphyloma—lids do not cover eyeball on account of increase in size of it, painful for years.

Right eye v=$^{15}_{xL}$ no signs of irritation in fundus, some dread of light, has myopic astigmatism.

Nov. 23. I removed the left eye.

Later. I corrected the optical defect in the right including his presbyopia.

R. E. homatropine $v=\frac{15}{xxx}$—0.50 D. cyl. ax. 135° for far, $v=\frac{15}{xv}+24\bigcirc$—0.50 D. cyl. ax. 135° for near.

In this case over forty years elapsed before enucleation was resorted to and the other eye presented no positive signs of irritation, he was willing to get rid of it more for cosmetic purposes and on account of the inability to close the lids over it than from any effect on the other eye, but the other eye improved slightly in vision after its removal and he had no dread of light, the correction of the optical defect giving full vision, this he had always needed slight as it was.

SUPPOSED SYMPATHETIC IRRITATION OR SYMPATHETIC OPHTHALMIA. NO ENUCLEATION OF THE INJURED EYE—CORRECTION OF THE OPTICAL DEFECTS IN THE OTHER EYE REMOVES THE TROUBLE.

Case VI.—W. W., male, 52, N. J. Jeff. Med. Coll. Hospital, June 8, '78. States that during the year '51 the right eye was burnt by portion of hot metal, a severe kerato-iritis produced, sugar of lead was used, and left a deposit in the cornea. In '73 the same eye was burnt again severely; the eye became very irritable, and he consulted an ophthalmic surgeon. The other eye, the left, has been lately troublesome, his vision being defective for some time. The injured eye has been inflamed of late. He consulted a ophthalmic surgeon, who advised enucleation of the eye. He came under my observation at the same time. Only could see light with the eye, the eye being in a state of anterior staphyloma of the cornea with superficial vascularity. The other eye, the left, $v=\frac{20}{l.xx.}$ the eye was quiet and the nerve and retina free from any inflammatory action. The eye ground presented only the appearance due to strain from an optical defect. A+12 gave vision $\frac{20}{xx}$ for far, and A+7 corrected his hypermetropia and presbyopia. The right eye was treated with hot water and atropia. I advised no further steps but to wear the glasses, and thought no enucleation necessary for the right eye, as no sympathetic irritation or sympathetic ophthalmia was present.

He writes April 23, '82: "My eyes have not troubled me since I was with you. I can count my fingers with my right eye (the injured one) at two feet and farther to the right side of the eye (the injured one)."

Case VII.—A. B. M., male, 35, Pa. Jeff. Med. Coll. Hospital, Dec. 8, '79. Struck in left eye with piece of wood one month ago; penetrated cornea, near scleral margin outer side of eyeball; produced traumatic cataract; severe inflammation followed. Professor William Thomson removed remainder of lens. The right eye was defective in vision, and at times painful. He had a high optical defect, which was corrected. R. E. atropia $v=\frac{10}{c}+16\bigcirc 18+$cyl. ax. $105°=\frac{15}{xx}$ the cornea of this eye contained opacities from the results of a powder explosion; his face and eyes being burnt. I saw him February 18, '82. The right eye having been hit, but no damage was done; both eyes were free from irritation at the time.

ENUCLEATION DONE FOR COSMETIC PURPOSES—CORRECTION OF OPTICAL DEFECTS IN THE REMAINING EYE.

Case VIII.—R. F., female, 25, Pa. Jeff. Med. Coll. Hospital, July 12, '81. Right eye lost from results of gonorrhœal ophthalmia eighteen months ago, large anterior staphyloma occurring, lids not covering eyeball, cornea continually irritable, T+1; vision reduced to light perception, vision in left eye troublesome, no signs of sympathetic trouble in the left eye, trouble due to optical defect.

L. E. duboisia $v=\frac{20}{Lxx}+0.75$ D$\bigcirc+0.75$ D. cyl. ax. $90\frac{20}{xx}$

The right eye was treated, but as the cornea was constantly exposed, and the eyeball so distorted, on March 15, 1882, Professor William Thomson enucleated the right eyeball for cosmetic purposes; wears artificial eye, and correction for optical defect in the remaining eye, the left.

Case IX.—J. M., male, 30, Pa. Jeff. Med. Coll. Hospital, March 22, '81. In January, '82, had gonorrhœal ophthalmia in right eye, corneal broke down in three days, and iris caught in the corneal tissue; the eye has been irritable ever since, considerable loss of corneal tissue so that it appears flattened; the eye was treated and rendered comfortable, but despite treatment would not clear up as desired; could count fingers imperfectly.

L. E. $v=\frac{20}{xx}$, trouble in reading.

L. E. hyoscyami sulp. $v=\frac{20}{Lxx}+1.50$ D. $v=\frac{20}{xx}$

As the patient desired to go West, and the eye looked so badly and had no effective vision, Professor William Thomson, on April 21, '82, enucleated the right eye; wears correction for optical defect in left eye.

RECURRENT IRITIS. CORRECTION OF OPTICAL DEFECTS MITIGATES OR PREVENTS FUTURE ATTACKS.

Case X.—R. B., male, 32, Pa. Jefferson Medical College Hospital, Jan. 28, '79. Has had double specific iritis, vision foggy, eyes irritable—repeated attacks of trouble—has received treatment.

R. E. v=$\frac{10}{CC}$ no synechia.

L. E. v=$\frac{20}{Lxx}$ four posterior synechia.

R. E. atropia v=$\frac{5}{C}$—8 cyl. ax. 180°=$\frac{20}{Lxx}$

L. E. atropia v=$\frac{20}{c}$—24 cyl. ax. 135°=$\frac{20}{xxx}$

No repeated attacks since. Seen lately.

Case XI.—A. B., female, 35, N. J. July 18, '79. Suffered from double iritis one year ago, synechia in right eye, been treated.

R. E. atropia v=$\frac{20}{c}$—48⌒—36 cyl. ax. 180°$\frac{20}{xxx}$
vitreous opacity

L. E. atropia v=$\frac{20}{xL}$—36 cyl. ax. 135°=$\frac{20}{xxx}$

Case XII.—H. C., male, 33, N. J. Dec. 31, '78. Cannot read or use eyes to advantage, pain, eyes inflamed—last May, severe double iritis; treated at the time, uveal spots on crystalline lens, has had repeated attacks.

R. E. atropia v=$\frac{5}{C}$+6⌒T+36 cyl. ax. 90°=$\frac{20}{Lxx}$ amblyopic.

L. E. atropia v=$\frac{20}{xL}$+36( )+36 cyl. ax. 90°=$\frac{20}{xx}$

Had slight trouble in July following, none since then.

215 South Seventeenth Street.

MEDICAL RELATIONS OF THE PREVAILING FORMS OF FOOD ADULTERATION.

By HENRY LEFFMANN, M.D.,
Lecturer on Toxicology at Jefferson Medical College.

I PROPOSE in this paper to bring to the notice of the Society a few facts in regard to the prevailing forms of food adulteration, the facts having been derived from several years' study of the articles as found in the markets of Philadelphia. The question is one of great importance to physicians, and I think none the less so in the light in which it will be here discussed. A considerable degree of error prevails in regard to the subject, and it is always the duty of those who have opportunities of knowing the truth in a matter of public interest to exert all means to quiet public feeling. The sensational tendencies of modern newspapers have caused the publication of a great deal of unreliable and exciting literature on this topic. To a certain class of newspapers or journals no presentation of facts or conclusions will avail; they are determined to have something exciting. Before an assemblage like this, which is a sort of Grand Inquest enquiring for the Commonwealth, we have an opportunity to present the case fairly. In several papers read before the Philadelphia County Medical Society, I have stated my conviction that very little disease or direct injury is to be feared from the prevailing forms of liquor adulteration, and in articles elsewhere I have repeated the statement in regard to food. Continued experience tends only to confirm this view, and, that the matter may be presented in proper form, I will notice simply some of the common articles of food and the adulterations to which they are subject. In reference to the results of my own experience I can of course only speak of what I find in Philadelphia, but its markets probably represent those of the State at large.

Among the most prominent forms of adulteration now in common use are glucose and oleo-margarine, and it will be proper to say a few words about these. Glucose is made by the action of sulphuric acid upon starch and in some other ways. Its manufacture has reached an enormous extent, many thousand pounds being made annually. It is used for all purposes nearly for which cane-sugar was formerly employed, and for some for which cane-sugar is not suitable. In sensational writing it is called a poison, and many who ought to know better have regarded it as injurious. Some who have hesitated to condemn the article itself have said that its use was dangerous because of impurities introduced in the process of manufacture, for example, sulphuric acid, plaster of Paris, and organic matters. These impurities are not always present, and when present are, I believe, without definitely injurious effects. As for glucose itself it cannot be regarded as an injurious substance. Cane-sugar itself is not digested as such, but is converted into substances allied and partly identical with glucose, and thus the only effect of its extended use is to save the stomach a certain amount of labor, namely, in effecting the conversion necessary for digestion. It may be argued, and, indeed, I think, with reason, that the exertion of digestion is a proper exercise, and that the stomach is as much injured by being saved from physiological labor as the extremities by being deprived of their natural exercise. To this I would answer that in the matter of sugar digestion civilized stomachs generally have too much to do. Sugar is used in excess of the normal requirements, and we can afford to spare some labor in this respect. In reference to the derivatives from glucose, for instance, the use of it in fermenting liquids no possible objection can be presented. Fermenting liquid, when produced under purely natural conditions, contains a form of glucose, and the alcohol which results from such fermentation is neither more nor less dangerous than that resulting from the purely artificial product of starch and sulphuric acid. One point, however, should be mentioned, although it does not seem very serious. Glucose is far less sweet than cane-sugar, its use, therefore, in cases in which the quantity used is gauged by the taste, may lead to the employment of excessive amounts in the endeavor to obtain the requisite degree of sweetness.

Leaving out of consideration such cases as the use of glucose in the manufacture of fermented liquors, for which it is suitable

and neither an injury nor a fraud, I will briefly present to you some samples which show its forms in which it is used. I have here specimens of the glucose in lump and syrup, and also in the special form which is an imitation of granulation, and is intended to fit the material for use in adulteration of table sugar. This specimen was given to me by a manufacturer, who had been for a long time working at a method for preparing glucose for use as a regular adulterant of granulated sugars, and who was highly delighted with the result he had obtained. I have here specimens of sugars which are adulterated to a large extent, and, of course, are inferior in sweetness. As simple tests for the detection of glucose in white sugar I may mention the following: Place a few grains of perfectly pure sugar on the tip of the tongue, enough to somewhat deaden the sense of sweetness and put on the same point the suspected sugar. The bitterish taste of glucose will be perceived if that substance is present. I have found that a perfectly pure cane-sugar is not rendered yellow by moderate boiling with solution of sodium carbonate, while glucose is soon affected, and this will, in many cases, be a good test. I may here remark, merely as a cautionary suggestion, that the ordinary test for glucose, used by physicians in urinary analysis, will not answer practically for a distinction between glucose and cane-sugar.

Another substituting substance, about which much has been written, is oleo-margarine, with its modifications suine and butterine. In reference to effects of these substances on the human system we must consider their source and composition. As to their source, I am willing to allow that they may be prepared under conditions which are unsafe. Diseased fats may be used and unclean methods employed, and while I think these things do not ordinarily occur, yet their probability is sufficiently distinct to authorize some official supervision. Here, however, let me remark that a somewhat similar objection might be made to genuine butter. While much of the farming in this part of the world is carried on with rigid attention to cleanliness, I have seen enough in my visits to dairies, in the course of investigations made for the State Board of Agriculture, to convince me that much opportunity for reform still exists in these places, and that many fastidious citizens of our large cities would cease to drink milk or eat butter if they could see the articles in process of collection and preservation.

As regards the dietetic relations of oleo-margarine, they cannot be materially different from butter, because the difference in composition is so slight, and it consists in the fact that oleo-margarine lacks a few substances which butter contains in small amount. Of these substances, the most important is a compound of butyric acid, of which butter contains about five per cent. No one has ever contended that the small percentage of a peculiar fat was essential to the economy, and hence we must conclude that, as oleo-margarine has all the important components of butter, and lacks only the unimportant and unessential, it cannot be a substance injurious to the users of it. As far as regards its quality, taste, etc., it may be said that, while many persons think they cannot be deceived by it, I know of a number of instances where persons who might be regarded as experts in butter (Chester County farmers, for instance) were completely deceived. Taking the matter, therefore, in its entirety, I think we may pass this butter substitute like we did the sugar substitute, as not of serious injury.

Considerable attention has been drawn of late to the alleged introduction of insoluble substances, such as talc, plaster of Paris, and chalk into various articles. The use of such in sugar is practically unknown. It is, however, now stoutly asserted that these materials are used extensively in flour, butter, and cheese, and that several large mills are kept going grinding the material. I have never found an instance of its use, nor have I ever seen the official statement of an analyst reporting such an occurrence, and my opinion is that it is a newspaper sensation. Such articles, if used, would be injurious if employed in any notable amounts; they would act as mechanical irritants, and might give rise to serious acute symptoms.

The prevailing forms of adulteration outside of the special substitutes which we have just considered, are diluting materials mostly entirely harmless but often outrageous impositions upon buyers. Such are starch and starchy matter which are put into ground spices and also into ground coffee. The opportunities for adulteration are greatly increased when the substance is in a finely powdered condition, and when in addition the pure material is expensive the temptation becomes too strong to be resisted, and it is therefore only rarely that such articles are found in the market in even near approach to purity. As a rule no notice need be taken of such adulteration, because it merely consists of the addition of cracker-dust or stale bread. Sometimes

an inferior article of tea or coffee is sold, which is composed largely of sweepings or refuse. A sample of ground coffee bought in Allentown was recently examined in my laboratory and found to contain nearly four times as much mineral matter as exists in the pure article. On examining this residue microscopically it was found to contain fragments of pebbles and bricks, and was probably a collection of sweepings. It may not be amiss to notice that such adulteration might become serious by the introduction of poisonous metals and their compounds. Bodies like the salts of copper, lead, or even arsenic, are not altogether unlikely to occur in ordinary refuse.

The adulteration of candies is a subject that has received much attention, and as I have made quite a number of researches on the subject, I will state briefly the results. Candies are not now much colored with injurious colors. The most objectionable color is yellow, in which lead chromate is used. The colorless candies, also the black and red, are generally quite harmless. The purest candies are probably those in sticks, made of melted sugar, because glucose cannot be satisfactorily used in them. The various forms of lozenges, especially those bearing affectionate mottoes, such as "Thine always," "Never forget me," etc., are largely mixed with plaster of Paris or starch. I have not found any decidedly poisonous substances in them, unless we consider the lead chromate to be such.

As a portion of the business of this Society is devoted to matters of State medicine and suggestions in reference to legislation, I cannot let this opportunity pass without stating my convictions that at present no urgent necessity exists for specific legislation in reference to food adulteration. I do not agree with the view that extensive disease is caused by the practice, and even if such effect did occur I feel certain that, under the principles of the common law, ample protection to the community exists, as soon as the attention of the prosecuting officers is directed to the matter. The extensive and elaborate system now in operation in England has not, as yet, disposed of the evil. If legislation is attempted in this country, it should only be to limited extent, and after careful inquiry. It should be directed only to enlarging the already existing rights of prosecution, and defining what constitutes the fraud. I think that it should not extend to the organization of a set of officials to conduct examinations.

PUERPERAL MALARIAL FEVER

By BERIAH EDWIN MOSSMAN, M.D.,
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The attention of medical men who reside in malarial regions has of late years been directed to the subject of the influence of malarial or telluric poison upon the lying-in woman. The result of careful clinical investigation has been to secure abundant testimony which goes to prove that during that period the poison will develop itself with such symptoms and conditions as to justify the conclusion that malarial fever is one of the diseases incident to child-bed, particularly in localities where malarial diseases prevail.

Although the term *puerperal malarial fever* is not included in medical nomenclature, it is, in my opinion, an appropriate one; and as time passes, and the disease is better understood, it will meet with recognition by practitioners and occupy a place in the medical literature of the progressive future.

The views which I express upon the subject in this paper are those arrived at from my own study and observation during an experience of over eighteen years' practice in a highly malarial region, during which time I have treated quite a number of these cases in my own practice, and have had the privilege of seeing others in the practice of cotemporary physicians. I have been unable to find any literature upon this subject, with the single exception of an excellent paper written by Dr. Barker, and published in the *American Journal of Obstetrics*, April number, 1880. The publication of Dr. Barker's paper anticipated me, as I was at that time preparing an article for publication upon the same subject.

It is a disease not unfrequently met with, and bears a striking resemblance in its symptoms to other diseases of a more serious nature, incident to the puerperal state in which local phlegma-

sia exists. Hence it is important that it should be recognized by the practitioner as early as possible whenever met with; for upon a correct diagnosis will depend intelligent and successful treatment. The occurrence of chills, followed with high temperature at such a time, cannot fail to cause alarm and anxiety in the minds of every person around the patient, as the great mortality of puerperal diseases is well known. Hence, if a chill has occurred, followed by high fever, and the case can be promptly pronounced a malarial disease, it will save the friends and all those near and dear to the patient a great deal of anxiety.

I will now briefly discuss, in regular order, the etiology, symptoms, diagnosis, and treatment of puerperal malarial fever.

Etiology.—In cases where the disease is developed immediately, or soon after delivery, the system has been previously charged with the malarial poison, and the effects of parturition upon the system produce the necessary conditions favorable for its explosion. A malarial fever may have existed during the last few weeks of utero-gestation, in a marked or ill-defined form. In other cases, where the attack begins later, it is most likely that the poison is in the atmosphere, and is taken into the system after delivery. Cases may develop in non-malarial localities where none of the conditions believed to produce the poison exist, the patient having formerly lived where malarial diseases were common, and had an attack of intermittent fever, upon the theory that once having had the disease, subsequent attacks will occur without being exposed to malarial influences.

Symptoms.—Clinically, cases of puerperal malarial fever differ greatly in the severity of symptoms, although every case will have paroxysms more or less prominent recurring at pretty regular intervals. These paroxysms will be followed with periods of apyrexia, or, if not complete absence of fever, the temperature will be much lower, and a general letting-up of all symptoms. The most prominent symptoms, according to Dr. Barker, are "chills, sometimes very slight; often a temperature one or two degrees higher than is found in the beginning of any other puerperal disease; a rapid pulse, followed by greater prostration than is usual with other diseases during this period. Then, in these cases, where the disease first manifests itself by such an explosion of striking and alarming symptoms, there is a remarkable remission on the following day, so that the obstetri-

cal attendant flatters himself that the attack is ephemeral, and that his treatment has been most wise and successful; but his delusion is removed one, two or three days after by a recurrence of the attack, but generally less severe. However, the succession of phenomena just described only appears in typical cases. I am disposed to believe that in a large majority of cases three or four days before the explosion the patient finds herself depressed by a general sense of malaise, more or less pain in the head, back and bones; insomnia, thirst and loss of appetite; and when the disease is developed the chills are less severe, the temperature not so high, the pulse less rapid, and the remissions less marked."

My experience has been that some cases commence without any of the prodromes of malarial fever being present to mark the approach of the chill, and the attack may begin very soon after delivery, in a few hours or during the first day. Again, the chill may be very slight at the first,—indeed, so slight as to entirely escape the notice of the patient and the nurse, and when this is the case the first warning of the existence of the disease will be a sudden rise of temperature, but at no time reaching the same height as is the case when the chill is severe and prolonged. Diarrhœa, pain in the bowels, offensive or suppressed lochia, are conditions that are sometimes present, and secondary hemorrhage is liable to occur in cases where the disease continues any great length of time, and will not succumb to treatment.

Delirium is a symptom I have seen, but most generally in those cases where there was suppression of the lochia, or it was scant and offensive. In these cases I have observed that the temperature mostly kept high, and the pulse fast, during the period when the intermission should occur, at the same time that the skin would be moist. It has been a matter of doubt in my mind whether these symptoms just mentioned were not mainly due to poisoning from absorption of septic matter. But there may be suppression of the lochia in these cases without any delirium or symptoms of blood-poisoning. In most cases of suppression, where it occurs soon after the delivery, it generally returns as soon as the disease is cured.

Puerperal malarial fever may follow successive confinements in the same patient, as was the case with one lady whom I attended after her last two confinements. This case was

exceptionally worthy of notice from the fact that the first time she had the disease the chill commenced in about one hour after labor had been completed—a remarkably early period of development. The attack was sudden and startling, and came on within an hour, as unexpected as a clap of thunder from a clear sky, there not having been any symptoms existing to indicate its coming—no headache, backache, aching of the bones or soreness of the flesh. The chill lasted over half an hour, and was followed by high temperature, severe pain in the head, and the symptoms that are commonly present with a high fever. I had not left the house when the chill began, and believed it to be due to shock—a nervous chill—which is a common occurrence after severe and protracted labors. Upon this theory I administered a large dose of bromide of potassium, but when the temperature went up very high and was followed by sweating, that gave the peculiar odor that, to the experienced physician, is almost diagnostic of malarial diseases, but which is indescribable, I was unable to explain her condition satisfactorily to my mind in any other way than that it was a case of puerperal malarial fever.

The next morning I found her free from fever, no pain, and feeling quite well. I felt confirmed in my opinion that the disease was malarial, and accordingly ordered five-grain doses of sulphate of quinine to be given every two hours. After she had taken one or two doses she refused to take any more, claiming that she did not need any medicine. In forty-eight hours after the first chill I was called in great haste to her bedside, and found her in the second paroxysm. The chill in this attack was not so severe or prolonged as the first, nor did the fever run up as high, although it continued much longer. As soon as admissible, sulphate of quinine in ten-grain doses, combined with full doses of bromide of potassium to counteract the paralyzing effect of the quinine upon the brain, was given. These doses were repeated every three hours until full cinchonism was produced. The lochiæ stopped on the second day, remained suppressed for one week, and then returned. She made a good recovery without any further trouble. At her last confinement she again had the disease, but it did not develop until the sixth day. The lochia was again suppressed for nearly one week.

I have already stated that diarrhœa may be present as one of the symptoms of the disease. I make this statement entirely

upon the strength of my own clinical experience, and whether the experience of other observers will sustain me I am unable to say. When it does exist, I have found that the patient is inclined to be weak, dull or heavy, and more or less delirious when dozing, and in many respects it closely resembles puerperal fever or septicæmia. The temperature may keep up quite evenly and the pulse-beat run high for two or three days, but close observation will show periods of slight intermission, and an absence of pain and tenderness in the bowels should lead us to the conclusion that the case is malarial. If quinine is given in full doses at such times as the symptoms are least aggravated, or, in other words, at the period of the slight intermission, and its administration is followed by moisture of the skin, slowing of the heart action, and rapid falling of temperature, the case is undoubtedly, other symptoms corroborating, puerperal malarial fever. Although, when these conditions exist, it is difficult to determine the true nature of the case, I believe that by careful watching and study a correct diagnosis can be made. Dr. Barker, in his paper, says:

"In this form, where the disease manifests itself in the early days after confinement, and is ushered in by a chill of moderate intensity, and the patient is dull, heavy and sleepy, with moderate wandering delirium, and especially if there be diarrhœa, the most experienced observer will wait for further developments before he decides whether he has to deal with a case of septicæmia or of puerperal malarial fever."

I deem it proper here to give a case of this character that recently occurred in my practice, as the resemblance it had to septicæmia was very striking. The labor was natural and speedy, lasting about four hours, multipara; for some days before confinement she had been troubled with diarrhœa and pain in the bowels. The preceding year she had resided in a malarial locality, and had had an attack of intermittent fever, which she was unable to get rid of for several weeks. After delivery I left her in charge of an experienced nurse, and, as I lived ten miles distant, I gave instructions for her to call a physician near by should anything occur demanding immediate attention. On the second day the diarrhœa returned with aggravated symptoms, the number of stools passed in twenty-four hours amounting to as many as one every hour. There was no pain or tenderness in the bowels, nor rise of temperature. The diarrhœa continued, more or less

under control by the administration of opium, until the morning of the sixth day, when she complained of numbness in the hands and feet, pain in the back and sides and across the chest, and dizziness. These symptoms were soon followed by a very slight chill of short duration, and a rise of temperature to 104°, and she soon became dull and delirious, inclined to sleep and wandering in mind after being aroused. There was no pain or tenderness in the bowels, although somewhat swollen with gas. The uterus was not tender, and there was an absence of any symptoms of septic-metritis. No fall of temperature or decline of other symptoms took place until the morning of the second day after the commencement of the feverish attack, when the temperature dropped about three degrees and the skin became moist; she still remained delirious, sleepy, dull and very much prostrated, which latter condition I attributed mostly to the diarrhœa, which was the most troublesome symptom to manage in the case. From the first I regarded the case as most likely malarial, and, just as soon as I observed a marked fall in the temperature, with moisture on the skin, I gave her full doses of quinine. She soon began to improve and a rapid convalescence seemed certain, when, on the fourteenth day after confinement, she had a recurrence of the intermittent-febrile attack, with the same train of symptoms as accompanied the first. The doses of quinine were increased and given regularly until she was well.

Invasion.—The earliest period at which the disease has made its appearance, in my experience, was, in the first case I have related in this paper, in about one hour after delivery. This patient lived in a malarial section of the city, and had had an attack of intermittent fever several months before; but at the time of confinement, and during the period of pregnancy, was unusually well and free from any of the symptoms that ordinarily precede the advent of malarial diseases. I am inclined to believe that most cases will commence at about the sixth or seventh day. The second case I have given shows that the intermittent attack, after having been brought under submission by appropriate treatment, recurred on the fourteenth day. This is an important fact, and should not be forgotten in the treatment of cases. The disease may occur at any time during the puerperal state, which includes the period of the first month after delivery, or until the physiological conditions have been restored.

Diagnosis.—The remarkable resemblance that puerperal malarial fever in many instances bears to the formidable inflammatory diseases, or those of septic origin, that occur during the steg-month of parturition, will cause the medical attendant some trouble to decide with any degree of certainty what disease he has to battle with. In some cases it will be likely impossible to make a diagnosis until the stages have been fully developed. Dr. Barker says, in speaking of differentiation: "In malarial fever a fall of temperature of three or four degrees is always attended with a corresponding decline of other symptoms, which is not the fact in septicæmia; and the latter is rarely accompanied by pain of the head, back, or limbs. The sensibilities are blunted instead of being morbidly acute. When the disease first manifests itself after the sixth or eighth day, I think, however closely the symptoms may resemble septicæmia, the fear of this may, with a considerable degree of certainty, be dismissed."

There is danger, however, that it may be confounded with puerperal fever; but if it is remembered that puerperal fever is a disease that generally begins on or about the second or third day, such a mistake is not likely to happen very often. Furthermore, puerperal fever, after the onset, pursues a steady course, and is not subject to febrile paroxysms, followed by remissions of high temperature, and these recurring at regular periods. There is most always pain, severe and lancinating, confined to the hypogastrium; the bowels soon become swollen, excessively tender to the touch, and the patient lies with the limbs drawn up; in many cases the weight of the bed-clothes cannot be borne.

From septic-metritis, cellulitis, or phlebitis, it can, I believe, be easily distinguished, as the characteristic symptoms of those diseases, in connection with the physical conditions, cannot readily be overlooked if due care and investigation be exercised. I am well aware that in some cases of inflammatory diseases, the symptoms are marked, and the local trouble so slight as to amount to nothing more than tenderness upon pressure over the womb. In cases of doubt, if the attendant is watchful and the disease be malarial fever, it will, without doubt, sooner or later show its true nature by falling of temperature, decline of the other symptoms, and moisture of the skin.

Treatment.—There is but one known remedy that is universally admitted to be a sure cure or specific for malarial fevers,

and that is quinine. It should be given in full doses from the first, as soon as advisable. It is my practice to give it in doses of fifteen to twenty grains upon the first indication of a fall of temperature. When the stomach rejects it, as sometimes happens when given in large doses, it will be best to combine it with a little opium, or administer it by enema. The neutral sulphate of quinine can be injected subcutaneously, if desired. Some difference of opinion yet exists as to whether quinine should be used in large or small doses, but I believe the profession now generally recommend large doses. Attention should be paid to all hygienic conditions; the clothing should be changed frequently, pure air should be admitted freely into the room, and the patient sponged daily with alcohol and water. The vagina must be washed out once or twice a day with warm water.

Complications must be treated as they arise, according to the judgment of the medical attendant, but by no means should they interfere with the treatment of the disease proper.

It should always be borne in mind that the disease is liable to return after having been checked, and the quinine must be continued for several weeks, in smaller doses.

POWDERED BORACIC ACID IN THE TREATMENT OF CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR ("OTORRHŒA").

By CHAS. S. TURNBULL, M.D.,
PHILADELPHIA.

A most gratifying experience in the use of powdered boracic acid in the treatment of chronic purulent inflammation of the tympanal mucous membrane, the constant symptom of which is otorrhœa, has induced me to consider the antiseptic, or what might be more accurately termed the "*dry method*" of treatment. The use of the syringe is in my practice a thing of the past, except in so far as employed for the removal of impacted cerumen, foreign bodies, etc. During the past twelve years in which I have been working in the department of Otology under Knapp, Politzer, Gruber, Schrötter, my father (L. Turnbull), and others, I have had unusual facilities for studying purulent diseases of the middle ear, as well as of ascertaining their cause, and although having of late followed quite a new departure in aural therapeutics am able to record a much larger than ordinary percentage of *absolute cures*.

As a great proportion of inflammatory affections of the middle ear may and do frequently terminate in suppuration, resulting in perforation of the membrana-tympani, and a discharge of serum, muco-pus or pus, which escapes from the external auditory meatus, it necessarily follows, that otorrhœa must be a very frequent aural symptom.

The marked success which has attended the modern, dry, antiseptic treatment of cases under my care, causes me to advocate its use in this most frequent form (in this country) of aural disease. I must admit that up to about two years ago, I felt like avoiding all cases of chronic purulent middle ear inflammation, that is, otorrhœa. I examined and treated the same with

inward misgivings, because I was a non-believer in all the methods in vogue. I had learned by experience to have no faith in the prescribed forms of cleansing, medicating and managing the ears of such of my patients as suffered from chronic otorrhœa. I had become so dissatisfied, that until recently I actually disliked to see, much less to be consulted by, a patient with a discharging ear. I was entirely disgusted with syringing. The odor of the usually worse than fetid discharges was at times actually nauseating, and until I commenced to use "Platt's Chlorides," a most valuable disinfectant and deodorant, I could keep neither fingers nor instruments free from the characteristic odor.

The practice of either medicine or surgery gives us more or less pleasure in so far as we are successful, and I must confess that, although successful to a degree, scarcely a day passed without my feeling chagrined at my utter want of confidence in the ordinary and various methods of treating chronic purulent discharges from the ear. In the otorrhœas following the exanthemata, especially scarlet fever, I felt less hopeful, and, naturally, it was more difficult, when self-despairing, to encourage my disheartened patients, than to treat the persistent foul discharge from their auditory meatus.

Having once made a diagnosis, there seemed to be nothing left but the employment of the customary unsatisfactory methods of treatment, namely, the removal of all growths, granulations or polypi and the subsequent use of astringent and so-called disinfectant washes to be instilled into the ear. Our old friend, nitrate of silver, was used for polypoid granulations which sprouted and waxed large under its topical stimulation, while solutions of the same in varying strengths now and then seemed to act happily and cure certain cases. Carbolic, chromic, and acetic acids, sulphate and sulpho-carbolate of zinc, sulphate of cadmium and copper, alum, permanganate of potassium, etc., were in turn used, and found beneficial in only a few cases. Then tannin, as a powder, was tried, and still more recently when combined with iodoform and thymol. These powders dried or partially melted and filled the meatus with an ugly black mass, which acted as an irritating foreign body, and smelled almost as disagreeably as the purulent discharge itself. Thymol was formerly supposed to cover the odor of iodoform. Patients invariably objected to the odor of iodoform, and,

although I have been recently furnished with a sample of so-called "deodorized iodoform," I must confess that it, as soon as exposed to the air, smelled as badly as the original article: and I am of the opinion that if a deodorized iodoform be procured, it will no longer be iodoform,—that is, from a therapeutical stand-point.

Anything new in therapeutics, especially as a means of combating that most frequent of aural symptoms, "otorrhœa," must call for immediate and specific attention, not only on account of its practical worth, but also for the greater power it gives every physician to control, yes cure, what hitherto has been generally considered an incurable (symptom of a) disease of the middle ear.

A symptom of a disease is often dignified with a specific title, as is the case with the use of the term "otorrhœa," which frequent usage in medical parlance has caused to be understood as synonymous with the now recognized and self-defining name, "chronic purulent (or suppurative) inflammation of the middle ear."

The causes which may lead to the existence of a chronic discharge from the ear are well known to the careful observer, but they are by far too numerous to be mentioned in detail at this time.

Whatever tends to provoke an inflammation of the mucous membrane lining the middle ear or its appendages, may lead to a perforation of the membrana-tympani and a discharge from the middle ear. In passing I must mention that it oftenest occurs in infancy, as reflex (tonic) from dentition. It may be, and is, alas! too often a sequence of the dread exanthemata, inherited taints (tubercle and syphilis), and is frequently caused by inflammatory extension from the gastro-pulmonary mucous membrane, nasal, post-nasal, supra-post-nasal and tubal spaces, and the much-vaunted irrigating treatments for the same. Last, but not least, by exposure, carelessness in cleansing the meatus, too forcible blowing of the nose, bathing, injections of aqueous solutions of *castile soap*, instillations of animal or vegetable oils, glycerine, etc., etc. The invariable tendency of most forms of *acute* purulent inflammation of the middle ear is to get well of themselves, if it were not that the peculiar conditions of the parts provoke the *fermentation* of stagnant secretions, the subsequent formation of pus, "the emigration of bacteria" (Loew

enberg),* and the meddlesome interference of those who never pause to consider the conditions present, but pursue time-*dis*honored plans of guess-treatment, which are, as a rule, dependent upon the fragile experience of empiricism.

The curing, that is, the stopping of a purulent discharge from the ear is the only desideratum, as it would seem, to many sufferers and their medical attendants, but I want to state emphatically that as a rule the discharge in itself does but little harm, it is a too heroic treatment, and the subsequent process of cicatrization, which, to a greater or less extent, damage the hearing power. It calls for intelligent management so that the functions of the acoustic apparatus (the tympanum and its appendages) may be not only preserved intact, but also be kept in motion. Precisely the same as in the case of a compound comminuted fracture of a limb, the surgeon is not especially anxious over the pain, amount of discharge, etc.; it is the course of the repair process as it influences the subsequent usefulness of the limb in question which *most* concerns him.

Acute purulent inflammations of the middle ear, as a rule, run a prescribed course, and, as we have already said, care for themselves, but at the same time the subsequent cicatricial contractions, due to plastic inflammatory changes within the middle ear (that is, the formation of connective new tissue, anchylosis of ossicles, etc., etc.), almost always produce more or less deafness and tinnitus aurium.

Chronic purulent inflammation of the middle ear continues its work of destruction year in and year out, gradually corroding the contents of the middle ear and seriously compromising the functions of its appendages (Eustachian tubes and mastoid cells), also by destroying the membrana-tympani and ossicles (malleus and incus, *rarely if ever the stapes*) and leaving a large gaping external meatus, ending in the posterior wall of the tympanum ("promontory" or *external* wall of cochlea) with its round window ("fenestra rotundo") exposed, and the stapes, *in situ*, over the oval window ("fenestra ovalis"). Upon these delicate parts, covered by an inflamed or ulcerated mucous membrane (which, it must be remembered, acts the part of the periosteum), all sorts of foreign material collect, and these with the added irrita-

* Archiv. Otology, Vol. X. Nos. 3 and 4. Translated by Jas. A. Spalding, Portland, Me., and Isidor Furst, New York.

tion from fermenting discharges (caused by the high temperature of the parts, collections of bacteria etc.) increase the fire of inflammation which burns fiercely and the mucous membrane in defence of itself pours out a copious secretion.

To remedy these affections, general surgery has done but little, so that in many instances medical men are glad to get rid of "patients with running ears," and this added to the prejudices in the minds of the community at large, and in some of the profession, too, as to the injurious effect of healing or "drying up" as it is termed, discharges from the ear, has caused this affection, through ignorance or apathy, to be much neglected. I cannot in this connection omit Sir Wm. Wilde's* quotation from Saunders† who tersely ventures a question or two concerning those prejudices which even to-day, alas! are urged against the cure of chronic otorrhœa. "What argument can be assigned against the cure of this disease that is not equally conclusive against all others? Is any one an abettor of the obsolete humoral pathology? He will contend that the stoppage of a drain which nature has established is pernicious, and the morbid matter will be determined on the internal parts: but how can such a person venture on the treatment of any disease, even the healing of a common ulcer? Some years ago I thought this absurd doctrine had been totally exploded, and yet I constantly hear it adduced to deter parties from interfering with this disease. Is a child a subject of it,—the parent is told it is best to leave it to nature, and the child will outgrow it. Is it an adult,—some other subterfuge, equally futile, is employed. The truth is, the disease is always tedious and difficult, and *not* always curable, and many are disinclined to embarrass themselves with the case, who have not candor to make the true statement."

I have often been met with the objection, and, I must confess, it is generally well put, "Why dry up the purulent discharge from the ear, since when suppuration is actually taking place patients, as a rule, hear best?" True enough, as the discharge ceases in a case of chronic otorrhœa, hearing

* Aural Surgery. Sir William R. Wilde, Dublin, 1853, edited by Addinell Hewson, M. D.

† The Anatomy of the Human Ear, illustrated by a series of engravings of the natural size, with a Treatise on the Diseases of that Organ, the Causes of Deafness and their proper Treatment, by John Cunningham Saunders. London, 1806.

power is, as a rule, materially diminished—but I always make reply by asking the question: "Which is better, half a loaf or no loaf?" that is, to stop the discharge and save some hearing, *which will be permanent*, or allow the discharge to continue, and, in a greater or less time, lose all hearing? Then, too, if only for the abolition of the disgusting fetor which accompanies such cases, if for nothing else, it is well worth while risking any fancied extension of the inflammatory process. Children with "running ears" are tabooed by their class and playmates. Adults are tolerated, while, self-conscious of the sickening odor from their ears, they shun society, and imagine, not without good cause, that every one is aware of their infirmity. The majority of such patients are generally willing to forego the greater or less amount of loss of hearing power, if the offensive discharge can be prevented.

Beyond a doubt a discharging ear is a thorn in the flesh, to be withdrawn in the shortest possible time. Apart from the risk of damage from a chronic purulent middle-ear inflammation (and its accompanying otorrhœa) to the hearing and subsequent happiness of the individual, is the undoubted compromised condition of the unfortunate's health. Fetid discharges run down the Eustachian tubes and poison the system. This no fancy deduction, but a fact. I can point to at least ten cases, treated within the last six months, where children have presented themselves in a chronic septic condition consequent upon the fact stated. By simple cleansing of the ears and teaching my patients how by Valsalva's method to blow the pus outward from the tympanum into the meatus which I keep filled with an antiseptic powder, *and not with cotton*, I have met with most pleasing results in these same children, who, from pale and emaciated subjects, have grown into fat and ruddy specimens of humanity.

Again, I am often confronted with the objection that "if these discharges from the ear should be stopped the disease will go to the brain." How did this idea originate? Because heretofore such heroic measures were used to check the discharge, because such caustic solutions were poured, and powders were insufflated, into the ears, furthermore because no intelligent treatment was employed. In the majority of cases no careful ocular inspection of the parts was ever made, and extension of inflammation and disease to the inner ear, or even brain, resulted.

(One word just here concerning the "insufflation" of powder into the external auditory meatus. I was never satisfied with the procedure, and was always forcibly reminded, on attempting such "insufflation," of the familiar trick of trying to blow into a bottle, which lies on its side, a light paper ball placed within its mouth. The harder one blows the more certain is the ball to fly out of, rather than into, the empty bottle. Precisely the same thing occurs when the attempt is made to insufflate powder into the auditory meatus; because the return current carries the most of it out again, leaving little or none in the meatus. The operator generally gets the most in his face. This point will be appreciated by those who have attempted to employ powdered iodoform in this way. Better drop one-fourth of the quantity proposed to be insufflated through a clean speculum.)

Bezold conceived the idea that boracic acid had failed on account of the powder used. He therefore procured *boracic acid in an impalpable powder*, and when he began *packing the meatus tightly* with it, obtained excellent results.

After my father's return from Europe in 1879, and especially after having visited Politzer in Vienna, Cassells in Glasgow, and Jones in Cork, he became a convert to the use of powdered boracic acid, and his success, coupled with my own, soon led me to be an enthusiast of the same persuasion.

We have given up the syringe as a means of treatment and have adopted the dry antiseptic method and the exclusive use of powdered boracic acid, which, in all chronic cases, we pack and repack into the meatus until there is a cessation of all discharge.

It is not, then, that I would claim for my father any discovery, but simply credit for having first introduced and perseveringly employed and, while advocating, taught* the use of powdered boracic acid for the successful treatment of chronic "otorrhœa."

I have described, at length, the exact details of the method which I considered indispensable to a successful use of powdered boracic acid for "otorrhœa," and furthermore I am, from my own experience and observation, led to consider this treatment as specific, because I have cured almost every case of the hundreds I have recorded for the past three years.

* Lectures by L. Turnbull, M. D., Aurist to the Jefferson Medical College Hospital, Philadelphia, November, 1879.

J. Orne Green, M. D. (*Boston Medical and Surgical Reporter*, June, 1860), in the course of a series of interesting and instructive views of the "Recent Progress of Otology," refers to a paper by Bezold,* on the "Antiseptic Treatment of Suppuration of the Middle Ear," in which Bezold says he has given up all others and prefers boracic acid as the most suitable antiseptic which he has used, finely pulverized, "to fill the meatus" or blow over the suppurating surface. He does not consider that it supplants, but rather assists, other methods of treatment.

Bezold's statistics were given to show the favorable action of this treatment upon twenty-nine cases of otitis media purulenta acuta, the average duration of the otorrhœa being thirteen days. Of one hundred and sixteen cases of otitis media purulenta chronica, the average duration was nineteen days.

Since Bezold's paper, Bückner† speaks largely of the powdered acid in the otorrhœas, and Dr. J. O. Green also recommended Bezold's treatment, which he had used extensively in the meantime.

From that time to the present, with but few exceptions, the treatment recommended by Bezold and Green was given a trial, but although Politzer, of Vienna, recommended it highly, and Cassells, of Glasgow, did the same thing, no one was satisfied that the plan of treatment was particularly efficacious, or to be preferred to many others.

The great mistake, as I have discovered, was in the fact of many experimenters not having observed Bezold's instructions; namely, that *the boracic acid must be nicely powdered.*

The ear is not to be syringed at all; it should be cleansed with absorbent cotton. How can a meatus, as tender and swollen and excoriated as they usually are in "otorrhœas," be cleansed with cotton on a probe? We answer most emphatically: Not by guess-work, nor in the dark. Unless the meatus be thoroughly illuminated, every pledget will in the majority of cases, except in experienced and careful hands, impinge against one or the other side of the wall of the meatus, and cause pain, exudation, etc., etc.

With the forehead-mirror adjusted so as to illuminate the meatus, the (outer) cartilaginous portion of the meatus can be thoroughly cleansed. I use the left hand to grasp the auricle

* Archiv für Ohrenheilkunde, Vol. XV., 1, Bezold.

† Archiv für Ohrenheilkunde, Vol. XVI., 1, Bückner.

and straighten the canal, and the right to manipulate the cottoned probe. Having gone so far, a speculum is carefully introduced, *illuminating as I proceed*, and through this (unless the meatus be unusually large, when the speculum can be dispensed with) the inner (osseous) portion can be cleansed down to the membrana-tympani. So much for the meatus. Now the tympanum must be cleansed. I never attempt to wipe through or into a perforation, but whilst the patient, by Valsalva's method, blows out any intra-tympanal secretion, wipe it up, or, in case of Valsalva's method being impossible or impracticable, I forcibly inflate with Politzer's air-douche, and so free the tympanum by blowing any collection into the external meatus.

According to the character of the intra-tympanal secretion am I guided in the introduction of the antiseptic powder, hence especial note must be made of the exact variety of the discharge as regards color, odor, consistency, etc., etc.

As the cleansing procedure is more or less apt to provoke reflex coughing, it must be gently and carefully done; *in fact, the successful treatment of any case greatly depends upon the method of cleansing the meatus.* If it be carelessly done more discharge is provoked, and an artificial eczema, aggravated by the powder used, defeats the objects sought by a thorough cleansing. As a rule, all applications of any powders, even such unirritating ones as boracic acid, become painful when they enter the tympanal cavity, and more especially as they dissolve and run down into the Eustachian tube; through which, experience has taught me, I dare not allow even pure water to pass, if I in any way consult the comfort of my patients. Solutions of borax, or better, boracic acid, water, and glycerine, may be used if the sensitiveness of the parts or the character of the secretions collected therein does not allow the use of the cottoned probe. Experience in the procedure of cleansing is absolutely necessary to success, and unless the operator make up his mind to conscientiously don the forehead-mirror, and methodically and carefully, under a good illumination, wipe out the meatus and thoroughly pack it with the powder used, he had better give up and call upon some one with more patience and experience.

Having cleansed the meatus the speculum is to be removed and thoroughly dried inside as well as outside. If admissible, and especially if the meatus be straight, a hard rubber conical

speculum is to be cautiously introduced as deeply as possible, being careful at the same time that such manipulation shall not scrape off the macerated epidermis, else half the calibre of the speculum will be occluded by such moist masses. With the speculum *in situ* the patient's head is to be placed at right angles to the body, or better, by resting the opposite side on the open hand or on a small cushioned table for the purpose. The patient's eyes should be kept closed and a napkin placed over the neck and clothing for obvious reasons. With a small hard rubber spoon, or better the old gorget-like instrument of Wilde, the powder is to be poured into the speculum, *ad libitum*. A little will drop through, but the bulk of the powder will remain in the speculum and this will require displacing and *packing*. To hold the speculum still and pack down the powder without causing pain from the edges of the speculum is no easy procedure. Force cannot be employed because by the pressure the edges of the speculum will cut; then too, and suddenly, the mass moves, and whatever is used to thrust it down is apt to impinge, with more or less force, upon the delicate parts beneath. I use a thin steel probe with the point (about 1 line) bent at a right angle, and whilst the auricle and speculum are held immovable, the parts being illuminated with the head mirror, (the head of patient unmoved from first position) I hug the inside wall of the speculum, and so can always tell when I am down to its lower orifice. As the powder is filled into the meatus, through the speculum, it is *packed*, layer upon layer, not tightly, but firmly, meanwhile I gradually withdraw the speculum until it reaches the mouth of the meatus. Here I insert a light pledget of cotton, only to be worn for six or eight hours (until bed time), and then to be withdrawn and not again introduced.

My directions to my patients are to permit, in fact endeavor to have all the powder possible remain within the meatus. If any moisture be felt, sop (that is wipe by pressing) the mass, and soak out the discharge with absorbent cotton or dry thin linen, but do not disturb the powder. From the moment this agent is used all odor, even from the most fetid discharges, ceases, and unless the discharge be extraordinarily profuse, never returns. No reaction ensues if filled into the meatus as I have directed.

I am now willing to confess that I have hesitatingly packed the meatus full of this powdered boracic acid and anxiously

awaited my patient's next visit; meanwhile expecting to be suddenly called to relieve some urgent symptoms of intra-tympanal pressure, or suddenly checked chronic purulent discharge, but was always agreeably disappointed. On the contrary, I was in each case exceedingly pleased and delighted with the good reports my patients invariably brought. Of course, the mechanical deafness caused by the foreign mass in the meatus was sometimes complained of, but this was gladly endured when explained as only of a temporary nature.

Oftentimes one packing was enough. In other cases, the packed powder was washed out, by the discharge, in a few days, but I persevered, and have always been rewarded for any trouble in filling and repacking. If the discharge ceases and leaves a hardened mass of powder, etc., filling the meatus, it must be removed, but not by force nor by syringing. It must be softened by the instillation of warm *fluid cosmoline* (petroleol), which has the charming recommendation of not becoming rancid by heat, etc. As the mass softens it may be delicately picked loose and blown out of the meatus by the rubber bag of a Politzer's air-douche.

Perforations are healed, and large ones at that; tympanal mucous membrane becomes almost normal in appearance, hyper-secretion and all odor is removed, and "running ears" are absolutely cured by this most valuable antiseptic agent.

Solutions of boracic acid in equal parts of glycerine (which will partly dissolve it) and water—forty to eighty grains of the powdered acid to the ounce *—are to be recommended in acute purulent inflammation of the middle ear, or even in chronic purulent inflammation occurring in small or unruly children. In either case such a solution, which I designate "aqueous solution," should be *warmed, well shaken, and dropped into the ear once or twice daily.* Where perforations do not heal on account of their great size, or where there is sclerosis of tympanal mucous membrane, etc., I recommend most highly *powdered boracic acid* suspended in fluid cosmoline in varying proportions, *warmed, shaken*, and dropped into such ears once or twice weekly.

Silver and hard rubber instruments used in aural surgery should be kept in powdered boracic acid, and absorbent cotton

* Equal parts of water, glycerine, *and strong alcohol* (as suggested by Knapp) to forty, eighty, or one hundred grains to the fluid ounce constitute the "alcoholic solution."

should also be dusted with the same. I have seen some forms of parasitic otorrhœas transferred from patient to patient, and even with the most careful surgeon a case of "aspergillus" is often followed by one or more fresh ones occurring in those of his patients who have been treated about the same time.

(In this connection I beg to state, after careful microscopic investigations and the study of clinical facts pertaining thereto, that all the so-called varieties of *aspergillus*, which are usually divided, according to their apparent color, into different species, are but one and the same fungus as it undergoes the successive changes from white, yellow and red or purple to black, each representing successive stages of development of the same fruit, which when fully mature is black.)

Purulent tuberculous inflammation of the middle ear can be dismissed in a few words. Do not expect to cure such. It cannot be done. Antiseptic treatment is advisable, if only to prevent extension of the disease; but morphia and opium should also be freely used (locally) to relieve suffering. Experience in the *otorrhœas, which occur in children during dentition*, has caused me to look upon such as almost harmless to the functions of the parts or to hearing, provided they are not syringed, are kept moderately clean, *and the secretion be prevented from undergoing fermentation.* As a rule, all such cases have been overtreated; the discharge, which is at first serous, becomes mucoid, and if pent up *by the fashionable and popular cotton plugs*, fermentation and putrefaction are sure to take place, and pus is copiously poured out.

Irritating medicaments, such as glycerine, and particularly solution of Castile soap,* the tinctures, oils which will become rancid, etc., should be kept out of the ear, and if the parts are gently cleansed with absorbent cotton, such otorrhœas will, in the majority of cases, cure themselves. The solution I prefer for stubborn cases is double the quantity of powdered boracic acid, to be taken up by equal parts of glycerine and water. The mixture to be always warmed and shaken and dropped into the partially cleansed meatus.

I am using *fluid cosmoline* entirely in my practice, and, as *this*

* Castile soap solutions, as injections, have been the cause of one-fifth of all the chronic otorrhœas which I have seen.

mineral oil * does not become rancid and induce parasitic inflammations, it is the best for the purpose, and may be conveniently used as a vehicle for powdered boracic acid, powdered extracts of opium and belladonna, morphia, atropia, etc.

As I have already strenuously advocated the free use of boracic acid I think it best to mention a few facts pertaining to its chemistry and pharmaceutical application. "Acidum boracicum—boracic acid. This acid was first obtained by Homberg (1702), and was formerly known as *Sal Sedativus Hombergi.* It is prepared by adding hydrochloric acid to a hot solution of borax, and crystallizes in white translucent scales of a white pearly lustre and of a slight acrid taste. Crystallized boracic acid is insoluble in ether, soluble in alcohol, and requires about twenty-six to thirty parts of cold and three parts of boiling water for solution. The solution imparts a brown color to turmeric paper" (Stillé & Maisch).

"Its physiological action is about the same as that of borax with which impure acid is often mixed. It is a powerful antiseptic and anti-fermentative. Boracic acid possesses decided antiseptic and deodorant properties. It arrests fermentation and putrefactive decomposition, and is destructive to minute organisms, bacteria, vibrio, etc. Boracic acid may be employed in all the various forms and combinations in which carbolic and salicylic acids are now used. It appears to be as effective as carbolic acid and is even less irritating to the tissues than salicylic acid." (Bartholow.)

"Boracic acid has been long in use in Sweden as a secret remedy, under the name of "*aseptin*," but was first brought into notice by Lister in 1875, since which time it has been very extensively used. The pulverized acid has the advantage of producing no reaction on the mucous membrane, of withdrawing the water from the membrane,† which keeps a concentrated solution in contact with the inflamed surface and of not forming coagulations (nor concretions) with the secretions." (Green, J. O.)

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* Although several members of the Society, and one of them a distinguished chemist, disputed the fact of *fluid cosmoline's* being a *mineral oil*, and wished to have it understood as a "vegetable oil," I insist on the term "*mineral*" the oil in question. One gentleman even preferred calling it an "animal oil."

† Hence, the peculiar effervescing, "fizzing" sounds described by patients into whose ears the powdered boracic acid has just been packed.

"*Borated cotton*" is of no use whatever in aural surgery, the ordinary, absolutely clean absorbent cotton being preferable and especially so when dusted with the dry powdered boracic acid. It is by no means an easy undertaking to pulverize the scaly crystals of boracic acid, and once in the mortar they must be bruised and pounded, instead of rubbed, and all careful pharmacists use a bolting cloth to make the powder impalpable; the process is, at best, a tedious one. I have been compelled to require my patients, for whom the powdered acid has been prescribed, to bring with them the substance procured, for inspection, since druggists, as a rule, unless according to special agreement, dispense a powder, so-called, composed, for the greater part, of crystals of the acid. When properly powdered, no particles can be felt, and in dipping the finger into such a mass the sensation can hardly be said to be that of touch; the impression is that of powdered soapstone, such as is used by the glove and shoe makers. Messrs. Wyeth & Bro. of Philadelphia have furnished all of the powdered acid that I have used up to this time, and are ready, at the place where they are making their exhibit, to furnish reliable samples of the powdered acid and the "aqueous" and "alcoholic solutions."

I have dwelt at unusual length upon the minutiæ of what I am now advocating, that is, the dry method of treating otorrhœa with powdered boracic acid, since, to secure success, every step I have described must be carefully considered and scrupulously carried out. I have purposely omitted any report of cases, because my plan of treatment has been the same in every one. Suffice to say, I am able to turn to all recorded as "chronic purulent otitis media" in my private clinical record-books, and, since the advent of the boracic acid treatment, invariably find them marked cured.

If I have not gone too deeply into the details of this method, which I would most earnestly advocate as well worth a trial, and if I have appeared too enthusiastic, I would say, cease syringing ears except for the removal of cerumen and foreign substances, and rely upon asepsis, as well as antiseptics and anti-fermentatives generally, in the form of dry powders, and rarely as solutions for instillation. Look upon water and glycerine and the much-extolled and detestable Castile soap solutions as local irritant poisons, and taboo them, at my recommendation, as worse than useless. Be assured that suc-

cess awaits those who will but adopt this method, which, at first sight apparently arduous, will eventually prove most profitable, both to patient and surgeon; and I will feel myself most happy if I have advanced the cause of aural therapeutics, and helped others win fresh laurels in the limited field of Aural Surgery.

1702 Chestnut Street.

SOME REMARKS ON INTRA-NASAL SURGERY.

By CARL SEILER, M.D.
Lecturer on Laryngology at the University of Pennsylvania, Chief of the Dispensary for Throat Diseases at the University Hospital, etc., etc.
PHILADELPHIA.

There is perhaps no ailment so common among all classes of society, in this part of the country at least, than nasal catarrh in its different stages, and therefore I think that a few remarks on what can be done by the surgeon for the relief of the numerous sufferers will not be out of place. It is not my intention to give an exhaustive treatise on the treatment of nasal catarrh, but to call attention to a few of the more recent surgical methods of treatment.

By far the greater number of cases which present themselves for treatment suffer from the second stage of catarrh, which is characterized by partial or complete, temporary or permanent obstruction or stenosis of either one or both nostrils; and it is these obstructions to the free ingress and egress of the air which give rise to a multitude of symptoms the nature of which is so well known that it is not necessary for me to describe them here. It is, however, evident, that if we can remove the obstruction to respiration in the nose, we will not only succeed in diminishing and finally curing the chronic inflammation of the mucous membrane of the nasal cavities, but we will also improve the general health of our patients, which has suffered from want of proper oxygenation of the blood; for it is a well-established fact that respiration cannot be carried on satisfactorily through the mouth alone. The adage, "Shut your mouth and save your life," which has been proclaimed by one of the great English authorities, is an excellent one, and by no means exaggerates the dangers of mouth-breathing; for the cold, dry and dust-laden air which is inhaled through the mouth acts as an irritant not only to the larynx and trachea, causing chronic

inflammation in these parts, but also affects the whole system by causing a contraction of the smaller bronchi and bronchioles, and is thus prevented from entering and fully distending the lungs.

In order to make myself clearly understood, it will be convenient to classify these obstructions, both as to their nature and origin. Thus we find that the long-continued irritation of the nasal mucous membrane on the one hand causes an increase in bulk—a hypertrophy—of the cavernous tissue covering the turbinated bones,—a growth of mucous or fibrous polypi, or even a localized thickening of the cartilaginous septum and of the turbinated bones. Sometimes we notice a bladder-like expansion of some of the cells of the turbinated bones, which then project into the nasal cavity and cause an obstruction.

Not infrequently we find a hard bony projection from the palatine process filling up the lower portion of the nostril, which is probably partially congenital and partially acquired. On the other hand, we frequently meet with cases in which the obstruction is of a traumatic origin, and due to the presence of foreign bodies in the nasal cavities, or due to a deviation of the nasal septum caused by a breaking of the nose. Often, however, the deviation of the septum cannot be traced to an injury received, and it is then due to causes which I will not here enlarge upon.

Thus it will be seen that the obstructions are either soft and fleshy, or hard and bony, or cartilaginous, and that different methods must be employed for the removal of these different kinds, and the instruments to be used must be adapted to the purposes.

I will first take up the consideration of the removal of the hypertrophies of the erectile tissue covering the turbinated bones, but before doing so will state that they are divided into anterior and posterior; that is, those which are situated at the anterior portion of the lower and middle turbinated bones and those which are attached to the posterior extremities. Either the anterior or posterior hypertrophies may be only temporary, thus producing temporary stenosis of the nasal cavities, especially at night, when the recumbent position favors the flow of blood into the cavernous tissue.

I find that the most satisfactory and at the same time least painful method of removing temporary anterior hypertrophies

is scarification with the galvano-cautery knife in the following manner: A rubber nasal speculum is introduced into the nostril until its end has passed the vestibule, and the hypertrophy is brought into view; then a slender galvano-cautery knife set at an angle to the handle, so as not to obstruct the view by the hand holding it, the conducting wires of which are insulated from each other by vulcanized fibre, is passed through the speculum, and an incision is made into the hypertrophy with the knife at a cherry heat. It is of great importance to have the platinum loop at the proper temperature, for if it is too hot considerable hemorrhage will follow the incision, and if too cold the application is very painful. With the galvano-cautery batteries in the market, it is impossible to accurately graduate the temperature of the knife, and I therefore devised the battery which is before you. It is so arranged that the zinc plates are suspended above the fluid, and may be immersed to any extent in it by depressing with the foot a treadle on the outside of the box. The amount of surface of the zinc plates exposed to the action of the acid determines the amount of electrical current, and consequently the amount of heat in the loop. By having the battery divided into two cells connected with each other, and each supplied with a treadle, the zinc plates may be alternately raised and lowered in each cell, and thus the heat may be kept at the same temperature for any length of time.

The immediate result of the incision is the formation of an eschar and of a certain amount of acute inflammation, which stands in a direct ratio to the extent of the burn, and therefore not too large an incision should be made at one sitting; extensive inflammation having followed in some cases where too much surface had been destroyed with the galvano-cautery knife.

The ultimate result of the operation is the formation of bands of cicatricial tissue, which by its contraction binds down the swelling, and thus prevents the stenosis. The number of incisions necessary to obliterate the hypertrophies will depend upon their size and firmness. In the same manner a curved galvano-cautery knife is used to cauterize the so-called "adenoid tissue or pharyngeal tonsil" in the vault of the pharynx. These operations, if the proper care is exercised, are not at all dangerous or painful, and on that account are preferable to the application of chemical caustics, which, as a rule, give great pain to

the patient, and are in the end not as effective as the galvano-cautery.

When the hypertrophies are large, and especially when they are situated in the posterior nasal cavity, hanging from the posterior portions of the turbinated bones, I prefer to use the Jarvis wire-snare to remove them. This admirable little instrument, which in its construction is very similar to an ecraseur, when properly used, is certainly the most satisfactory means of attaining the end in view. To remove a large, sessile anterior hypertrophy I proceed as follows: First I transfix the growth at its base with a curved needle devised for the purpose, and then pass the wire loop of the instrument around the handle of the needle, then over the growth and point of the needle as it emerges from the tissue, and draw the wire tight before making traction with the milled head screw of the instrument, and then gradually snare off the swelling, occupying from fifteen to twenty minutes for its removal. When the wire has passed entirely through the tissue, which it does generally with a jerk, the hypertrophy comes away sticking to the transfixing needle.

If, however, the hypertrophies are situated so far back that they project into the posterior nasal cavity, and can be seen only with the rhinoscopic mirror, the manner of removing them is very different. The mode of attachment and the apparent size of the swelling having been determined with the mirror, the wire loop is made large enough to slip over the swelling and its size is measured, before introducing it, by means of the little measuring device attached to the instrument. This is done to determine when the tissue has been cut through by the wire, for it often happens that shreds of mucous membrane are drawn into the tube of the instrument after the swelling has been cut through, and then traction is as difficult as though the tissue had not as yet been cut. The rhinoscopic mirror is then introduced and the swelling brought into view with one hand, while the other introduces the wire loop through the inferior meatus until it reaches the post-nasal cavity where it can be seen in the mirror. The instrument is then carefully manipulated until the loop has passed over the growth and has grasped its usually pedunculated base, when slow traction is made and the swelling is gradually snared off. It generally takes from an hour and a half to two hours to complete the operation, for if less time is consumed the pain will be considerable and the hemorrhage copious.

If the patient's palate is at all unruly, and thus prevents the wire loop in the posterior nasal cavity from being watched in the mirror, it must be secured, for it is necessary that the motions of the wire should be directed by the rhinoscopic image. The drawing down and forward of the palate may be effected by passing an elastic band through the lower meatus and out of the mouth, where it is secured by means of Jarvis's tape-holders in such a manner that the soft palate is drawn forward without making undue traction. The tape is best drawn through the nose by means of a large Eustachian catheter, through which is first passed a piece of catgut string until its end appears in the pharyngeal cavity, where it can be secured by a pair of forceps and drawn out through the mouth, the other end still projecting from the nasal cavity. The catheter is then withdrawn and the elastic tape secured to the end of the catgut string projecting from the nose, when it may be drawn through the nose and mouth and be held by the tape-holder.

Localized thickenings of the cartilaginous septum, which are not infrequently found in old cases of nasal catarrh, and which produce partial stenosis, may also very readily be removed with the wire snare in the same manner as the sessile anterior hypertrophies. The steel wire used in this operation should, however, be very thin, so as to cut readily through the cartilage, and the needle used for transfixing the base of the thickening must be quite strong so as not to bend inwards. There is very little pain connected with these operations, and they can all be performed without putting the patient under the influence of an anæsthetic.

The method usually employed by surgeons for the removal of nasal polypi and other tumors in the nasal cavity is to tear them out with a strong pair of polypus forceps. This rough and ready method is, in my humble opinion, not only extremely painful to the patient, but also very bloody and, as a rule, unsatisfactory, because the base or pedicle of the tumor is generally left behind, and from it a new polypus develops in a short time, so that the operation has to be repeated over and over again. Furthermore, considerable injury is inflicted upon the healthy mucous membrane during the "fishing" process in the blood-obscured nasal cavity. For these reasons I prefer the wire snare to the polypus forceps for the removal of nasal polypi, and proceed in the following manner: Having brightly

illuminated the anterior nasal cavity, I introduce Jarvis's snare with a medium-sized wire of annealed steel, making the loop just large enough to slip over the polypus in view, and manipulate it until it has encircled the base or pedicle of the polypus. I then draw the wire tight with the sliding tube, and finally snare it off slowly by turning the milled head-screw. In a short time the polypus will come out cut off close to the mucous membrane, without tearing or in any way injuring the latter, and consequently but very little pain is experienced by the patient, and little, if any, hemorrhage follows the operation. One after the other of the tumors are removed in the same manner until the cavity is clear, which, as a matter of course, takes some little time, as the polypi are generally multiple and quite numerous. Having accomplished this I carefully touch every bleeding point which was the seat of a removed polypus with a flat galvano-cautery loop at a cherry heat, and thus have succeeded in a large number of cases in preventing a return of the tumors.

When the localized thickenings of the cartilaginous septum have become ossified, or when the obstruction in the nose is due to an exostosis of the septum, or due to an enlargement of the turbinated bone itself, and not merely to an hypertrophy of its covering mucous membrane, or, finally, when a bony spur from the palatine process is so large as to cause stenosis, neither the wire snare nor the galvano-cautery are of any avail, and the obstructions must be removed by breaking them up with a drill and burr.

For these operations I have heretofore used a dental engine, either White's, with the flexible shaft, or Bonwill's, with the jointed arm, in the hand-piece of which the drills and burrs are rapidly revolved, just as the dentist uses them for excavating decayed teeth. Within a few weeks, however, I have substituted for the dental engine a small electric motor, invented by Mr. Griscom and manufactured by the Electro-Dynamic Company of Philadelphia, to which the hand-piece of the engine carrying the drills and burrs is attached, either directly to the spindle of the motor or by means of a short flexible shaft. The speed of the drill can be regulated to a nicety by means of the adjustable battery which belongs to the motor from a few hundred to fifteen thousand revolutions per minute, and its power is equal to if not greater than that of the dental engine. When

used for operation, the apparatus is suspended from the ceiling with cords, which are run over pulleys and carry counter-weights so as to balance the motor in any position it may be placed in. This arrangement relieves the hand of all weight, and thus a much more delicate manipulation of the tool is possible than can be obtained when the dental engine is used, for in the latter instrument the hand has to support the weight of the hand-piece and flexible shaft or arm, and besides, a good deal of the motion of the foot working the treadle of the fly-wheel is communicated to the hand, making it unsteady. The tools used are the same as employed by the dentist, except that when the bony obstructions are far back in the nasal cavities they should be longer in the shaft.

The operation is performed as follows: The bony obstruction is first riddled with a number of holes made with a cutting-drill and its substance is then broken down with a coarse burr, the diameter of which is greater than that of the drill, and finally, any shreds of mucous membrane or spicules of bone which remain are cut off with a pair of scissors. After the lapse of about twenty-four hours it is again generally necessary to trim off the surface of the wound with the scissors, as projections which have been overlooked in the first instance then show themselves, after which the wound is allowed to heal up. Usually but a very moderate amount of general inflammation of the mucous membrane of the nose follows the operation, and the wound heals readily in a few days.

As a rule, I find it more convenient to place the patient under the influence of ether, so as to have perfect control of him; but in several instances I have drilled away large bony excrescences from the septum without ether, and have found that the operation is not nearly so painful as might be expected.

For the relief of the obstruction caused by deviation of the septum a variety of operations have been recommended; but in my experience I find that the simplest, easiest to perform, and at the same time very satisfactory, operation is the following: With a strong pair of forceps, which has inserted into one of its blades a number of knife-blades at right angles to the surface, and arranged in the shape of a star,* the septum is punched at its greatest curvature once, or, if the bend extends far back, twice, by introducing the blade carrying the knives into the open

* This forceps was devised and first used by Dr. Steele, of St. Louis.

nostril, and the unarmed blade into the closed one, and then compressing the handles. The punch is then removed, and, with a pair of forceps having flat blades, the septum is forcibly straightened, which becomes possible since the triangular pieces produced by the cut made with the punch lap, and thus the distance from the base to the top of the septum becomes diminished. Having accomplished this, the forceps is removed, and a wooden or ivory plug, shaped to fit the cavity, is inserted into the formerly obstructed nostril, and is kept there for about forty-eight hours, when it is replaced by a plug of cotton, which must be renewed daily until the cuts in the septum have firmly united and the septum remains straight without support. This operation, also, is not very painful, and can very easily be performed without ether.

For the removal of necrosed bone, and for treating caries of bones in the nasal cavity, I know of no better means than the dental drill and burr attached to the electric motor, for the delicacy of the movement allows the hand at once to detect when the tool has penetrated the diseased structure and sound bone is reached.

Deep ulcerations of the mucous membrane in the nasal cavity, I find, do not readily yield to the usual applications of chemical caustics, and therefore I am in the habit of treating them either with the galvano-cautery knife or with a corundum cone mounted on a long shaft and revolving rapidly in the electric engine. When the ulcers are small, the charring of the surface, after the secretions have been removed, with the glowing platinum loop, answers every purpose, and is not nearly as painful as the application of solid nitrate of silver. If they are large, however, and especially when there are unhealthy granulations, it seems best to freshen up the surface with the corundum cone, which, when rapidly revolving, enables the operator to remove all diseased tissue without injuring the healthy.

It is self-evident that in order to effect a complete cure of the trouble it is necessary to follow up the operative measures with medicinal applications with a view to remove the chronic inflammation of the mucous membrane co-existent with or due to the mechanical obstruction of the nasal cavities; but as my intention was merely to offer a few remarks on the surgery within the nasal cavity, I will not here enter upon a consideration of the medicinal treatment of nasal catarrh.

Dr. Addinell Hewson, of Philadelphia, presented a voluntary communication on

"PAPER AS A VEHICLE FOR PRESERVING SOAPS TO BE USED IN SURGICAL AND MEDICAL PRACTICES."

Dr. Hewson remarked by way of parenthesis, that the time of the session was now short, making it desirable that all communications to it should be as brief as possible—and, as he wished to make this especially a demonstrative communication, he would make it also essentially a *verbal* one.

He stated that about fifteen years previous he had been induced to test the practicability of substituting and using unglazed paper for patent lints in surgical dressings. The results of these experiments were of the most gratifying character. In them were demonstrated not only the better absorbent powers of some of the paper experimented with over the lints, but their better powers of retaining moisture and of adhering to surfaces, which were sufficient to show their advantages over the lint—and that the common unglazed paper used for printing on the news and advertisements of our daily *papers* fulfilled all our requirements as well as, if *not better*, than, the lints in use, and could be had at far less cost.

These searches into paper as a substitute for lints led to trials of it for many other purposes in surgery and medicine. Thus it was found to offer a better means of applying cerates, ointments and such like. Then by a natural sequence paper was tested as to its powers to hold wax, with the view of using it so prepared in place of "oiled-silk." These last-named experiments were begun with *tissue paper* completely covered with a thin film of white wax applied to it by a very simple process. A large bread-pan, of sufficient length to equal the width of the

sheets of tissue paper, was filled half full with melted wax, and then placed in a larger pan containing hot sand to keep the wax constantly melted. A strip of bevelled wood moulding (such as is used to finish off the wash-boards and wainscotings of our houses) was then placed along one side of the pan to serve to strain off all surplus of wax from the paper after it had become more than saturated by being dipped and drawn through the fluid. As the sheets of paper were so drawn across this moulding by one person, another one placed over them a long piece of wood with a smooth sharp edge by which, with firm pressure, he could wipe off all the redundant wax, and add it to that not required to thoroughly coat the tissue.

Dr. Hewson stated that this preparing *waxed paper* was so easy that he used always to have it done by his convalescent patients in the Pennsylvania Hospital.

His experiments and researches were all, at first, relative to the use of *tissue* paper for *this* purpose. Subsequently they were extended to that of other forms of paper, and the Manilla, which, on account of its very little cost, offers no inducement to bleach or adulterate, and which is everywhere known as the kind of paper used at the hotels for water-closets, was found to be far better than any. Many can recall the character given to it by a zealous druggist in Philadelphia, who advertised it in his window as "soft and strong."

Those characteristics it certainly does possess to an extreme degree, and they make it particularly fit to be used in the place of the silk. Dr. Hewson stated that his experience with the *waxed tissue-paper* had demonstrated a possibility of saving over $400 per annum in the Pennsylvania Hospital by that item alone, and this was done without any effort at stinting or economizing; so that fully $4,000 could be saved there by such a substitute in ten years. The very much less cost of the Manilla paper and its much greater durability, and also the less cost of yellow beeswax, would justify the calculation of a saving by it, of fully $600 per annum in the hospital.

Some specimens of waxed paper of various forms were then exhibited, and Dr. Hewson pointed out the fact that their very little cost enabled the surgeon to throw them away after having been once used, and so freeing his patients from a source of contamination which must be present whenever the silk is used, and has to be *rinsed* on account of its expensiveness.

Dr. Hewson then referred to the trials which he had made with paper in other characters of surgical and medical dressings, and dwelt particularly on the advantages which it possessed as a means of carrying a distance such dressings all ready for use. Here he exhibited samples of tissue and Manilla papers thoroughly impregnated with soap—a strip of either $2\frac{1}{2}$x3 inches in size being capable of holding all the soap necessary to make a stiff lather sufficient of itself to shave one's chin and thoroughly wash one's hands. There being left a piece of paper pulp of the size of a pea after such use had been made of the strip.—The production of a glassful of thick lather was demonstrated.

In commenting on the advantages of this mode of preserving soap to be used in surgical and medical practice, Dr. Hewson said:

First.—It was a means of a positive saving of soap, as it not only prevented any more soap being used than was required in a specific instance but prevented the wasting always to be seen in a soap-stand.

Secondly.—It was a means of preventing contamination from one patient to another in a hospital, as resulted where either the soap cakes or solution of soap was used.

Thirdly.—It was a means of preventing soap in use from becoming musty or mouldy, as even the best of castile would become if kept constantly moist on the under surface of the cake by frequent wetting and resting on that side.

Fourthly.—It enabled the practitioner to secure to himself a good article, of which he could always carry pieces sufficient for any emergency in his pocket or satchel, and so to always be prepared to cleanse his hands without fear of contamination or mischief from chapping of his skin.

Dr. Hewson here took from his vest-pocket a package of a hundred sheets of the soap-paper prepared with tissue paper and glycerine soap. These sheets were the size of a gentleman's visiting-card, and were held together on a string in a little fancy paper wallet.

To show how readily such paper could be prepared, Dr. Hewson had gone into the store of Mr. Lippincott in Titusville, on the evening after his arrival in the town, and requested that druggist to prepare some of it, giving a preference for the manilla paper as the basis. That gentleman did it promptly with nothing but a hot solution of English glycerine soap, and had it all ready the next morning put in envelopes for distribution

amongst the members of the meeting. They were now distributed by Dr. Hewson.

Dr. Hewson further stated that not only a *hot* solution but an alcoholic one might be used of the soap, especially of that made with glycerine, which would favor the more thorough and more rapid saturating and covering of the paper. He had used castile, palm, and cotton-seed oil soaps in this way with the greatest satisfaction; but of these he had derived the most from that made of the cotton-seed oil—a soap which is now retailed in Philadelphia at one-third the price of the castile.

SOME REMARKS UPON HERNIA, WITH A FEW CASES OF HERNIOTOMY.

By E. GRISWOLD, M.D.,

SHARON.

An attempt to lay anything before this society on the subject of hernia or herniotomy may seem to many of its members a superfluous work, and I may say in the outset that I do not propose to grapple with the subject in its entirety, for if I felt so inclined it is quite too voluminous to be compressed into the space of twenty minutes. It is only intended to invite attention to such parts of the subject as personal experience and knowledge have led me to think of almost transcendent importance, and entirely too much neglected by the profession at large; I shall, therefore, confine myself to a few remarks on the radical cure, and then present a few cases, mainly illustrative of occasional difficulties in diagnosis. I am fully persuaded that if a complete list of all cases of hernia in this State could be presented, its magnitude would cause no little surprise; and if all the strangulated cases not reducible by taxis, and suffered to die without operation, could be annually reported, it would present a startling, if not appalling spectacle, of death,—death without the benefit of surgery.

Dr. James Wallace of New Castle, Lawrence County, recalls six deaths from strangulated hernia not operated upon, within the past thirty years, in his county. In recent interviews, physicians from other counties, without being able to give numbers, recall several cases each of such deaths within their neighborhoods, and there seems little doubt but that the same state of affairs exists in a large part of the State. This being true, it is evident that many lives are lost that might and ought to be saved. If the profession took as much interest in hernia and herniotomy as it does in ovarian tumors and ovari-

otomy, the results of strangulated hernia would be quite different. Scarcely a case of ovarian tumor is now neglected; as soon as discovered and diagnosed the operation is proposed, and the patient is at once made acquainted with the wonderful achievements of ovariotomy; but the sufferer from strangulated hernia is too often allowed to die without the *dernier ressort.*

It will be admitted to be the duty of every member of the profession to act in accordance with his abilities, as a conservator of the public welfare, as far as it is affected by accidents or disease; and failure in past efforts to devise a method for the radical cure of hernia should not discourage or deter us in efforts for the future, for, judging of the future by the past, the time of success cannot be far off. The past generation could not have believed that ovariotomy would have been the means of saving several thousand women from death, and of adding many thousand years of life to the population of the civilized world. But there are, as far as I can learn, more cases of hernia requiring relief by operation than there are of ovarian tumor. If this be true, and statistics for both could be made available, more deaths from hernia without operation would be shown than from ovarian tumors *in toto.* Experience has shown that trusses, however well fitted and apparently well adapted to individual cases, cannot be looked upon as affording perfect security against protrusion and strangulation. Among the many operations hitherto devised for radical cure, I am not aware that any have proved to be sufficiently easy of execution and successful in results to commend themselves to the profession. Indeed, nearly all such operations require a degree of tact to induce patients to submit to them, and skill for their performance, such as few possess, and such as will, probably, for a long time to come, prevent sufferers from making efforts for permanent cure. Heaton's operation seems likely to be the coming method, and commends itself to the patient because it is so simple and so nearly painless as to almost disarm it of the terrors of surgery. Proof of its success seems to be accumulating, and, from our present knowledge, hopes may be entertained of its final triumph. But if the operation could cure every case upon which it is practiced, there would still be a considerable number of sufferers, who, through ignorance, indifference, poverty, or unavoidable circumstances would not avail themselves of its benefits. This class of subjects would

still occasionally present cases for taxis and herniotomy. There are, moreover, two other classes of cases, of which it has been my fortune to see several, in which, from their nature and attending circumstances, no curative method is available as a primary operation.

Many of you have doubtless met with one or both of them. In the one the accident is sudden and without premonitory symptoms; there having been no previous suspicion of any tendency to it. It is usually brought on by an injury from a strain, jumping, a fall, or a blow over the inguinal canal. In the other, the subject has been conscious of an inguinal or femoral protrusion for some time, but unconscious of its nature until the surgeon, on being called in consequence of a sudden strangulation, reveals its true character. If, therefore, the most sanguine hopes for Heaton's operation—or any other curative procedure, could be realized, cases of hernia and of strangulation must still present themselves on the list of accidents with which we must deal, and it is of the highest importance that we deal skillfully with them, for an irreducible strangulated hernia admits of but little delay, and dalliance is dangerous if not criminal. Practitioners who do not feel themselves capable of operating with a reasonable degree of skill, should seek that skill elsewhere betimes. The way in such cases is a broad one, but has a middle course, on one side of which may be written "Do not let your patient die of strangulated hernia without an operation," on the other "Do not operate yourself unless competent and do not wait too long." Operated cases are sometimes lost by too much delay. The diagnosis of the presence of strangulated hernia is not always easy.

Numerous cases have occurred in which it has not been made during the life of the patient, or else made at so late a period as to practically deprive the patient of the benefits of surgery. This apparent dereliction is sometimes caused by neglect of the patient or the friends to summon a physician in time, sometimes through ignorance or carelessness, and sometimes, though rarely, through ambiguity of the symptoms. The following cases are selected for the purpose of illustrating these propositions, and of showing the importance of promptly attending to herniotomy.

Case I.—In the year 1848, in my embryonic student life, a boy aged twelve years, of delicate physical and precocious

mental organization, while playing at "Hop, step, and jump," felt a pain in his right inguinal region, accompanied with nausea. He was at school and was obliged to go home. Vomiting soon came on and continued the remainder of his life, which lasted but six days. A medical practitioner—a churchbrother of his parents—who styled himself a "botanical physician," was summoned. Now a botanic physician is developed by a process of evolution not exactly Darwinian from a Thomsonian, and from the botanic, the eclectic, the highest result of evolution yet attained by the sect. This botanic doctor very soon discovered that the patient was "bilious" and needed a lobelia emetic, and, as no bile appeared as the result of its action, it must needs be repeated, and when the pain and retching had induced sufficient reflex irritation to reverse the peristaltic action of the duodenum as well as of the stomach, bile began to appear. This was entirely satisfactory, and was the signal for discontinuing the emetic, but the expected relief did not follow. Pain in the abdomen became severe and continuous, and on the third day of the case a "lump" was discovered in the right inguinal region. This discovery prompted a consultation, and another of the same ilk, but of a little higher evolution—being also a "uriscopist"—was called. These two wiseacres diagnosed an abscess, and on the fifth day made an incision into it, intending to evacuate pus, but instead, a stream of intestinal gas, followed shortly by fecal matter, rushed out, filling the room with a terrible stench. These parasites were now dismissed and regular physicians summoned, who at once recognized the nature and hopelessness of the case. The *post mortem* showed strangulated hernia, gangrene of the strangulated portion, and general peritonitis, with intestinal effusion. Among those endowed with the more elevated qualities of the mind, a disposition to condone the weaknesses and blunders of others is not uncommon, nor need its rectitude as a principle of action be questioned when applied to the ordinary affairs of life in which practical knowledge and the exercise of ordinary judgment are the qualities by which men succeed or fail in their business enterprises. But it should be far otherwise when applied to the conduct of physicians in their professional relations, for they alone are authorized to deal with the bodily infirmities of mankind, and must, in the performance of their duties, not infrequently carry human lives in their hands. Nothing short

of a full equipment drawn from the storehouses of professional knowledge should suffice for them or satisfy their fellow-creatures. Thus equipped, they are, and of right ought to be, responsible for their work.

Case II.—In the summer of 1871, a stout, muscular young man, twenty-three years old, while lifting a heavy weight in a stooping position, suddenly felt a pain in the right inguinal region, which was soon followed by a sickening sensation. He felt a tumescence on examining the seat of pain. He was brought a distance of four miles to our office, where Dr. Bishop, my partner, discovered he had oblique inguinal hernia of the right side, and tried for some time to reduce it, but without success. This was early in the forenoon. In the afternoon I joined him, and having anæsthetized the patient, we succeeded by a slow process in pushing the protruded mass, which was small, above the external ring. At this stage of the work his buttocks were elevated nearly to a perpendicular, with the object of completing the reduction by gravitation, should a portion of the intestine still remain within the canal, which was too small for exploration by the finger. The patient was now allowed to return to consciousness; so far as he could judge by his own feelings he was completely relieved. There was, however, a slight tumescence still remaining over the canal, and, notwithstanding the sense of complete relief the patient felt, some doubts remained in our minds as to whether reduction was *actually* complete, for it must be remembered that in a case of sudden occurrence like this, the inguinal canal is nearly, if not quite, of its normal length. In view of this uncertainty, the patient was directed to go to a hotel in town, take a dose of salts, and should it fail to operate, or should unfavorable symptoms occur, to inform us. We heard nothing more of him for six days, when we learned that he had died three days after leaving us, without an operation, and that a *post mortem* had revealed strangulation of a small knuckle of intestine within the canal. Instead of following our advice, he had gone early next morning to his home in an adjoining county. Had symptoms of strangulation revealed themselves by the next morning, as I expected in case the salts did not operate, it was my intention to perform herniotomy. The patient had a brother at home, a young physician, and was probably anxious to put himself under his care.

Case III.—In October, 1875, at 7 A. M., I was requested to see Mrs. H., aged 55 years, and found her suffering severe neuralgic pains in the hypogastric region. For some days previously she had general neuralgia, affecting nearly all parts of the body. I gave a full dose of morphine, with directions to repeat at short intervals in diminished doses until relief was obtained. Her sister reported some four hours later that, although stupefied, the patient was still suffering great pain. The morphine was continued until 3 P. M., when I found her still in great distress. There was no disturbance of the circulation, no fever, no vomiting, nothing but pain—the pain still in the hypogastric region and deeply seated, suggesting neuralgia of the uterus. I now made a careful examination of the abdominal surface, and discovered a lump about the size of a hen's egg in the left inguinal region. "Why did you not tell me of this tumor, Mrs. H.?" I asked. "Oh, I did not think it worth while, as I have had it for years, and it has never hurt me. Sometimes it is there and sometimes it is gone. It is apparently a sort of phantom tumor." On feeling it herself at my request, she stated that it was larger than usual. Believing the tumor a femoral hernia, efforts at reduction by taxis were begun and continued at intervals until eight o'clock, but without success. At this time the patient began to vomit, and continued to do so every few minutes until 9.30, when the vomiting became stercoraceous and she seemed greatly depressed both physically and mentally. My partner, Dr. Bishop, was now sent for, and with his assistance, I operated about ten o'clock. A slight enlargement of the femoral ring sufficed for the reduction of the strangulated knuckle. The patient lay several weeks in a very feeble condition, with a heavily coated tongue of a yellowish-white color and pasty consistence. There was to my mind limited enteritis. She finally passed into a slow convalescence which ended in recovery, and at this time she enjoys fair health.

The want of early characteristic symptoms in this case, together with the patient's ignorance of the significance of her evanescent tumor, were well calculated to mislead the practioner. The pain and vomiting were wholly relieved by the operation. The symptoms are usually more rapidly developed, and the demand for relief earlier in femoral than in inguinal hernia, but the atrocious intra-pelvic neuralgia, and the fecal vomiting at so

early a period of this case make it somewhat anomalous. Had the patient made me aware of the presence of the tumor at my morning visit it is quite probable that reduction might have been effected without herniotomy, for the moment a hernial mass has passed outward, lodged beneath the skin, and become constricted, more or less obstruction to the circulation takes place, and causes turgescence which increases, *pari passu*, with the intensity of the constriction, and more or less effusion into the connective tissue of the intestinal coats and sometimes within the sac, greatly increasing the volume of the mass and the difficulty of reduction.

Case IV.—In 1875 a little boy aged five years was jumping, and felt pain in the right inguinal region. His mother immediately discovered a lump there. Dr. R. attended him, and was assisted on the fifth day by the counsel of Dr. C., who believed herniotomy necessary. I was summoned on the sixth day. The child's temperature was elevated, abdomen tensely distended, resonant and sensitive, pulse frequent and feeble, general pallor and shrunken features. There had been occasional but not excessive vomiting for several days. The diagnosis of strangulation was rendered doubtful by the fact that fecal evacuation had taken place daily up to, and including the fourth day. The hernia was large for so young a child, and it was believed to be largely, if not wholly, omental. After examining the case and hearing its clinical history, I was inclined to concur in this opinion, and also to think that considerable peritonitis existed. The situation seemed desperate, but it was finally decided to operate. On opening the sac I found, somewhat to my surprise, that it contained intestine only; that it had descended to the testicle, against which it had jutted so long and so firmly that it was moulded to it so as to resemble the articular facet of a finger joint. The intestinal coil looked remarkably well considering the fact, now apparent, that it had been incarcerated six days. There was congestion, to be sure, but no plastic effusion, no maculation, and no appearance of gangrene; in fact the constriction was not very tight, and but a slight nicking of the external pillar was necessary to enable me to effect reduction. I did not see the patient after the operation, but learned that his case balanced pretty evenly between life and death for several days, when *vis vita* obtained the ascendency, and a gradual recovery followed. The length of time

the strangulation existed, the fact that for four days fecal evacuations took place, and that very little vomiting occurred, taken in connection with the other symptoms, instead of verifying the existence of strangulation seemed rather to negative it, and to make this case of difficult diagnosis.

Case V.—On Friday, December, 1881, I was requested by Dr. Sullivan to see a little boy patient seven weeks and five days old, of whom he gave the following history: On Wednesday evening the child had shown signs of illness by giving such expressions of pain as are common to infants. There were also occasional attacks of spasm of the muscles of the extremities, manifested by extreme flexions of those members with transient rigidity and more or less contortions of the body. The child seemed to be in great distress. Late in the evening the mother discovered a tumor in the right inguinal region involving the scrotum. Before morning occasional vomiting took place, and in the forenoon of the next day a homœopathic practitioner saw the child, said there was strangulated hernia, and employed taxis for a time, when he said it was reduced. Before leaving he was asked by the father whether he would call again or not. He replied there would be no need of it, but that he must take the child to a trussmaker and have a truss adjusted. It was noticed that no diminution in the size of the tumor or frequency of the vomiting followed this operation of reduction. The baby's sufferings seemed in no degree ameliorated; for this reason Dr. Sullivan was called on Friday morning, and I was requested to see the case, prepared to operate if thought best. I found the hernia was scrotal. Dr. Sullivan anæsthetized with ether—a very tedious process, as the child vomited by a sort of regurgitation almost continuously. When having tried taxis until satisfied of its inutility, I went down to the sac, which was unusually large. On puncturing it a stream of water spurted out. Opening it freely the coil of intestines presented, jutting against the testicle as in Case IV. There were brown discoloration, maculation, and on the side next the median line of the body, adhesions of the intestine to the sac, and of the sac to the surrounding tissues. The adhesions were separated, the stricture, which was at the external ring and very close, was freely incised and reduction performed. As soon as the child had reacted and began to show signs of pain, ten drops of paregoric were given; this dose was repeated

twice during the ensuing night, and the child kept pretty quiet. Notwithstanding the medicine, a free discharge from the bowels occurred the next morning. But little union by first intention took place, and erysipelas of the wound following, that little was broken up. After a few days the erysipelas subsided and granulations gradually closed the wound. No other occurrence hindered recovery and the child was soon well.

These cases exhibit the average of a considerable class met with in general practice, but by far the most numerous class of cases of hernia are those the subjects of which have been in the habit of wearing trusses. These are less apt to become strangulated, and are more easily reduced by taxis when strangulation occurs than fresh cases; for *cæteris paribus*—the widened canal of an old inguinal, and the widened ring of an old femoral hernia are far less liable to cause constriction during the temporary descent of an abdominal viscus, than the comparatively narrow canals and rings of fresh cases. The area of labor for the profession and this society is a wide one, and contains many fields; of these some are highly cultivated, some receive less attention, and a few are fallow. In the midst of one of the latter rises the grim spectre of a victim of neglected hernia pointing backwards across the intervening ages to Apollo, whom it implores to introduce herniotomy to the people.

Let us do it!

A CASE OF OVARIOTOMY.

By WILLIAM VARIAN, M. D.,

TITUSVILLE.

On the 16th of February, 1881, I called at the office of Dr. Charles Kibler, of Corry, when I chanced to meet Mrs. G., who, in the opinion of Dr. K., was afflicted with a tumor of the left ovary. At the doctor's request I made a hasty examination of her case. I found a firm, hard, inelastic tumor, as large as the womb at the fifth month of pregnancy, occupying the left hypogastrium and dipping deeply into the pelvis. It was smooth, had few perceptible irregularities of the surface, was movable and free from pain and soreness when handled. The patient was thirty-nine years old, and her knowledge of the tumor extended over two years. The vaginal exploration showed that the pelvis was well filled with the mass, and the womb, somewhat displaced to the right, was of abnormal depth. I could detect no fluctuation, and the tumor, when moved, carried the uterus with it. The patient was in good health, well nourished, with an active circulation, and was remarkably free from either systemic or sympathetic disturbance. My examination was far from being a satisfactory one, owing to want of time. Mrs. G. was anxious not to lose a train which was then nearly due, and I was therefore obliged to dispense with the removal of her heavy winter clothing, and so failed to have free access to and perfect command of the abdomen. In spite of this, however, I felt justified in diagnosing a uterine fibroid, and in advising non-recourse to operative procedure so long as the patient's health continued good.

About eight months later, on the 10th of October, 1881, I again met this patient at Dr. Kibler's office, when I found that a very decided change had taken place in her condition. It appeared that shortly after her examination in February, Mrs. G.

had visited one of the Western States, and while there had met with a severe fall, some time during the month of April. Her feet slipping from under her, she came down in a sitting posture with extreme violence, and as a result was obliged to maintain a recumbent position for twenty-four hours. Lameness and soreness was the only apparent result of this accident until two or three weeks had elapsed, when she noticed a marked and progressive increase in size, which had steadily continued up to the time of this meeting. From that time she had suffered abdominal soreness and discomfort, and the numerous array of sympathetic disturbances so frequently met with in these cases. She was now as large as a woman at the full term of pregnancy, and all the evidences of a rapid failure of her systemic powers were clearly manifest. I found the same firm, hard, inelastic tumor in the left hypogastrium which was present at the time of the first examination, apparently unchanged in size. The rest of the abdomen was occupied by a large tumor, evidently containing several subdivisions, which yielded on palpation sensible, although somewhat indistinct, evidences of fluctuation. The two tumors could be completely separated, and I was able to pass my hand between them to an extent only limited by my power of indenting the walls of the abdomen. The moving of one growth did not appear to influence the other unless made to impinge directly upon it. This examination was made under the same unfavorable circumstances as the first, but still I was satisfied that there were now two tumors co-existent in the case; one probably ovarian, polycystic and colloid, though possibly a fibroid, the other certainly a fibroid. I suggested the removal of the ovarian tumor as well as the opposite ovary, hoping by producing an artificial menopause to completely control any further growth of the fibroid, and probably to secure a decided reduction in its size. If I found the removal of the fibroid, with or without the uterus, indicated by the appearance of the organs after laparotomy, I would remove all the diseased organs.

Circumstances of a personal nature prevented my patient from resorting to an operation until four months had elapsed, when, on February 15th of this year, I operated at the home of Mrs. G., near Columbus, Warren County, in the presence of the following gentlemen: Doctors Kibler, B. H. Phelps, and Elston, of Corry; Walling, of Columbus; J. T. Waid, of Spar-

tansburgh; Sherwood, of Union; Whitney, of Lottsville; and Blaine, of Pleasantville. The patient at this time was very anæmic and prostrate. Her abdomen was enormously distended with a very large polycyst, the upper portion of which fluctuated freely whilst the rest of the tumor gave that elastic semi-fluctuation so characteristic of cysts filled with semi-solid colloid material. A solid mass about the size of a pint bowl in the left upper portion of the tumor was all that could now be traced of the fibroid, but this still retained all the characteristics of the original tumor. Every care had been taken to carefully prepare the patient and to render aseptic the room, the patient, the surgeons present, the instruments, sponges, and operator.

As I anticipated a more than usually formidable operation, I had caused the patient to be brought to a condition of mild inebriation. By thus producing turgidity of the cerebral vessels I hoped to secure prolonged anæsthesia with the least expenditure of the agent, and with a minimum risk to my patient. I will not dwell upon the successive steps of the operation, as these vary only in minor details with different operators, and are too familiar to all present to be of special interest. Besides, the rules for the conduct of each operation after the abdominal incision are furnished by the case itself. My only rule is to perform the work which is spread before me with as much rapidity as is consistent with thoroughness, and to meet with prompt decision every emergency that arises in the manner which appears at the time most likely to conduce to the ultimate safety of my patient. When permitted to use any preference, I now always drop the pedicle; yet I still use the clamp and other methods of treatment when they seem in any case to manifest advantage. To leave a perfectly clean abdomen I believe to be of vital importance. So much by way of parenthesis.

I found but one tumor in the abdomen. This was a polycyst of great size. All the cysts but one were filled with colloid material which was almost solid in consistency. The exceptional cyst, a large one, contained the thick dark-colored viscid fluid so familiar to all ovariotomists and so characteristic of a large number of ovarian cysts. On the left upper aspect of the tumor was the firm, solid mass described. This, when incised, presented all the sensible features of a genuine fibroid. It was

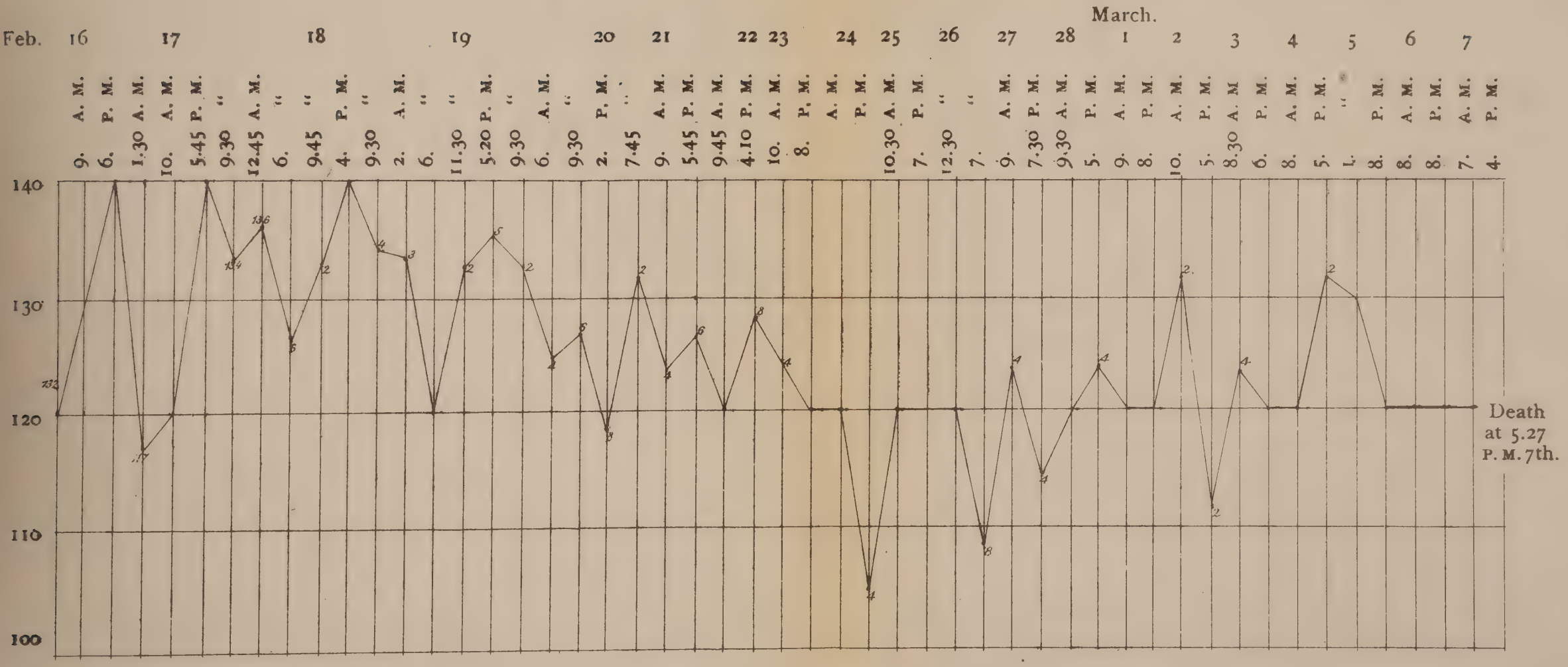
an integral portion of the tumor itself. The pelvis was filled with organized fibrinous exudation, which enveloped all its contents and rendered the development of a pedicle to the tumor impossible. After an unsuccessful effort to enucleate, I ligated the base of the tumor and removed it. The weight of the mass and contents was about forty-five pounds. The patient was under chloroform about one hour.

The after treatment was conducted by Drs. Kibler, of Corry, and Walling, of Columbus; and the skill, energy, and judgment displayed by these gentlemen merit a daily report of the progress of the case, but this is forbidden by the limits of this paper. Dr. Walling has furnished charts of the pulse and temperature curves which accompany this paper. By these we see that the highest range of the thermometer was 101°, which point was reached during the first twenty-four hours. On the second day 100° was reached, after which time the temperature at no time reached 100° and rarely exceeded the normal. The pulse was quick throughout the case. During the first three days some blood appeared in the urine, but this readily yielded to the exhibition of the salicylate of soda. Owing to neglect of the nurse the patient suffered from urethritis and vaginitis. The bowels acted normally, and the condition of the abdomen was all that could be desired during the course of the case. At first the discharge was very free, and aseptic irrigation of the cavity of the abdomen was required several times a day. A sense of heat and soreness in the abdomen which made its appearance on the fourth day was promptly met and as promptly subdued with the ice bag, together with the exhibition per orem of quinine and opium. The silver sutures were removed on the ninth day, at which time there was union of the entire wound, except where the drainage tube rested in the lower angle. The drainage tube was removed on the fifteenth day, as all discharge had ceased.

At this time the patient, her friends, and the physicians felt a strong assurance of a complete recovery. But alas for human hopes! On the seventeenth day a violent attack of vomiting occurred, which resisted all treatment for twenty-four hours, and produced an amount of prostration which in the end proved fatal. In spite of rectal alimentation and every means which skill and ingenuity could suggest, the patient gradually sank away, and died on the twenty-first day. On the 8th of March,

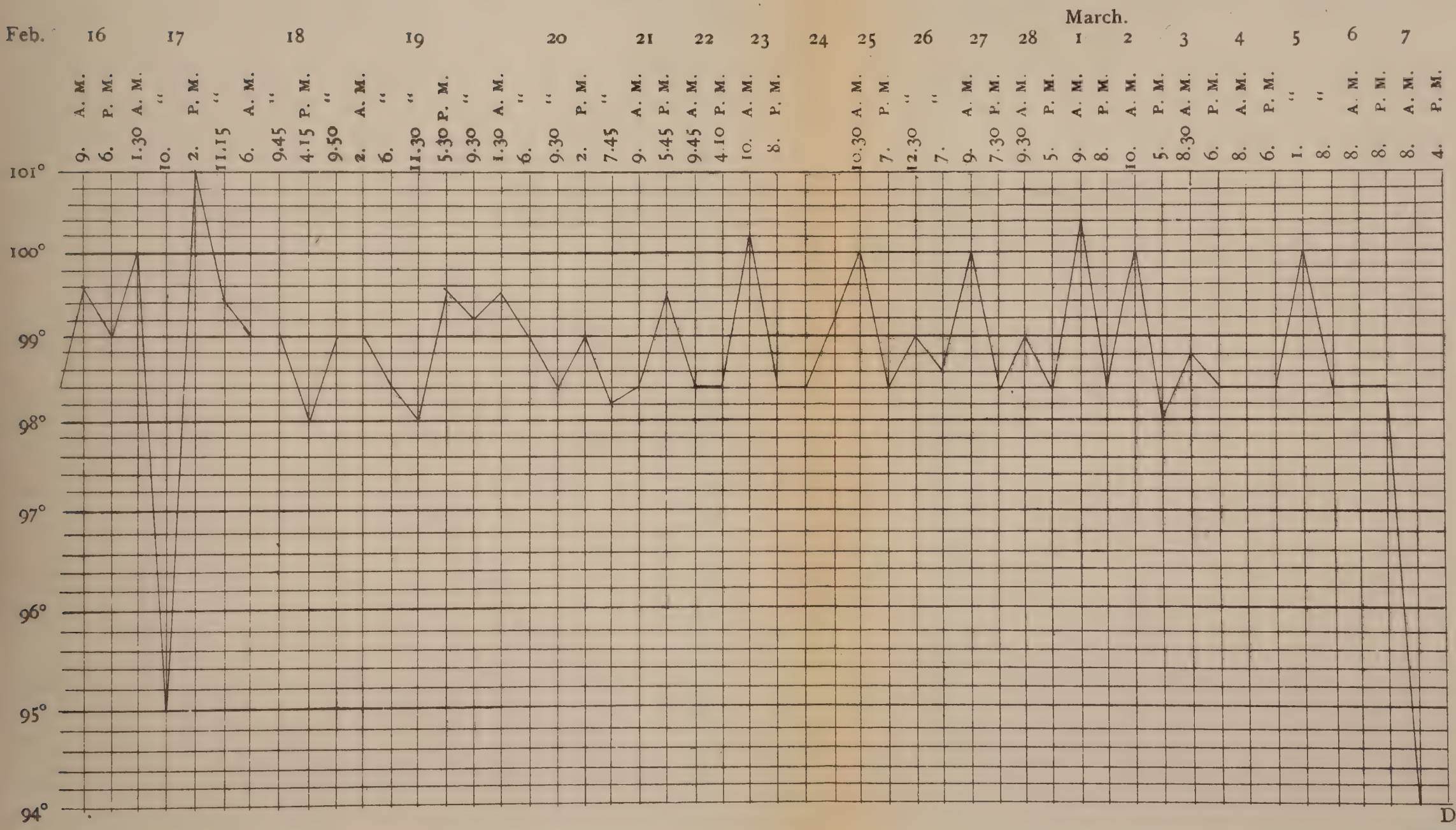
CIRCULATION.

MRS. GRAVES, COLUMBUS.



Thermometrical Record.

Mrs. Graves, Columbus.



Death
at 5.27 P. M.
March 7, 1882.

I visited Columbus to perform another operation, and on my arrival was met with the sad intelligence of the death of Mrs. G., which occurred on the evening of the 7th, just twenty-one days from the date of the operation, and four days after she had felt such strong assurances of her perfect recovery. It is due to Drs. Kibler and Walling to say that the patient had not the means to provide herself with a trained and skillful nurse, and that she lay at a farm-house two miles from one of her doctors and six miles from the other. And during her entire confinement the roads were in such a condition that whether a physician rode, drove, or walked to see his patients, he would be inspired with an ardent wish that he had selected some other method of locomotion. Under these circumstances, are we not justified in asserting that neither patient nor doctor had a reasonably fair chance?

Although the case briefly reported above has an intrinsic interest in itself, yet I attach to it an added interest because it appears to throw some light upon the possible reason of the rarity of the occurrence of ovarian fibroids, so far as their existence has been demonstrated by operation. That experienced and skillful ovariotomist Dr. William Goodell states, in a clinical lecture recently reported, that the occurrence of fibroid tumors of the ovary is so rare as to have even been denied by some writers, but that in his personal experience he had met with three tumors of this character. In my own experience it has occurred to me to remove one fibroid of the ovary, and had I operated upon this patient in February, 1881, soon after I first saw her, I see no reason to disbelieve that I should have added one more to my list. For that this tumor was a fibroid, or at least what we call a fibroid, at that time, I saw no reason to doubt. That the injury from the accident in April, or some other cause, produced degeneration in the tumor and an entire change in its character, I also believe. I ask, then, is it not possible, and even probable, that this is a frequent termination of fibroid tumors of the ovary? And since recourse to operative interference is usually delayed until the patient's health begins to give way, may not this be the usual termination of this form of tumor? I remember well in my earlier experience as an ovariotomist how much I plumed myself upon having successfully removed a colloid polycyst which a year or more before had been pronounced a fibroid by an ovariotomist of skill and

experience. Another question: Are colloid polycysts benign in their character, or do they possess the elements of malignancy? In other words, are they semi-malignant tumors whose incipient stage is represented by what we call a fibroid? The hope of receiving a reply to these questions is my only excuse for occupying your time and attention with the report of so common an occurrence as the removal of an ovarian cyst.

EXCISION OF CARTILAGE IN NASAL OBSTRUCTION DUE TO DEVIATED SEPTUM.

By JOHN B. ROBERTS, M. D,
PHILADELPHIA.

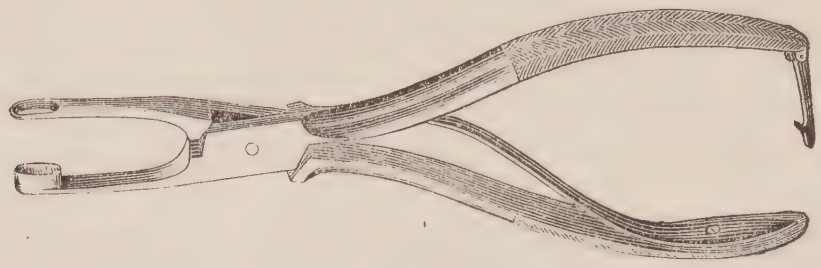
I desire to call the attention of the Society to this method of treating lateral deviation of the septum, causing nasal obstruction, since the general teaching has been such as to induce the profession to look upon these cases as usually irremediable. There is prevalent a traditional notion that the cartilaginous partition between the nostrils must not be perforated in efforts to render the occluded nostril patulous. Hence patients with a nostril entirely closed by a deflected triangular cartilage are often told that nothing can be done to relieve the nasal and throat symptoms due to the abnormal respiration.

Sometimes attempts are made to alleviate the trouble by dilating the narrowed orifice, or by paring away a portion of the surface of the cartilage. In the latter method, care should be taken, it is said, to avoid perforating the septum. This caution is a mistake, and frequently prevents sufficient removal of the obstructing cartilage.

When the deviation is not very marked, relief can sometimes be afforded by making a crucial or stellate incision through the septum at the point of greatest deflection, and pressing the weakened cartilage away from the outer wall of the nostril. It can be kept in this improved position by a nasal bougie until the wound has cicatrized, if a tendency to assume the original condition is exhibited.

In very many cases, however, the most satisfactory treatment, because the most radical and efficacious, is to cut out a disk of cartilage at the point where deviation causes obstruction by

approximation of the septum to the external wall of the nasal cavity. This is best done by the nasal punch, or cutting forceps, here exhibited by me.



The opening left between the nostrils is no objection to the procedure, because it does not weaken the support of the nasal cartilages materially, and is not small enough to produce whistling sounds during respiration. It is invisible unless the nasal cavities are illuminated or examined with a speculum, and hence it is not objectionable on cosmetic grounds.

The deflected and occluding portion of cartilage can be cut out by a scalpel or gouge; but this is a crude operation, difficult of performance when the obstruction occurs far back in the nares, and is not applicable when the deformity requires a disk of the bony septum to be removed.

The fenestrated cutting forceps, which I have had made, are an improvement over others intended for the purpose, because the mucous membrane on both sides of the septum is more cleanly cut, the disk is more likely to be removed by the forceps on their withdrawal, and the instrument retains its keen edge longer. When the forceps has been forcibly closed upon the deviated part of the cartilaginous or bony septum, it should be rocked from side to side a little, to ensure entire division of the tissues. After an opening in the septum has thus been made, any remaining obstruction can usually be remedied by enlarging the orifice by cutting out additional pieces.

THE MANAGEMENT OF THE PERINEUM DURING LABOR.

By FRANCES N. BAKER, M. D.,

MEDIA.

If any apology seems needful to the members of this association for occupying their time with the consideration of so *trite* a theme as the one which I have selected, I will simply offer in my defense the large number of lacerated perineums that are constantly being found upon the gynæcological table.

I feel certain that either the *methods* which we have adoped for the protection of this important structure have been very defective, or that these same methods have been imperfectly *executed*, else we would not so constantly meet with the undeniable proofs of many disastrous failures.

This subject of "perineal preservation" (or support, as it is frequently termed) is entirely the outgrowth of civilization, for the ruder nations make no attempts in this direction. And it would be a matter of much interest, and some profit, perhaps, could a tabular statement be obtained of the number of lacerations happening among a people who practice no manner or method of preservation, and then compare it with the number of tears occurring in the hands of those practicing the most active interference (even to the extent of unremitting support for ten or twelve consecutive hours).

Another item of not less interest would be a comparison of the *different* methods *now* in use for the avoidance of lacerations, with the percentage of failures belonging to each. But such information as this will scarcely ever be ascertainable.

Statistics upon perineal lacerations, outside of hospitals, are not abundant. There seems to be some unwillingness on the part of the profession to acknowledge the occurrence of this accident, unless it has happened at the hands of some other practitioner.

Again, a great difference exists in estimating the *gravity* of the lesion. What one observer estimates as a slight rent, another with higher ideals of professional success regards as a tear of considerable moment. Then, too, we have not a uniform standard of measurement, and the figures employed fail to give a correct idea of the *extent* of the injury. The centimeter of one or the inch of another may mean much or little.

Since perineums are not all of the same dimensions we will arrive at a more accurate understanding of the condition if we regard the whole perineum as the unit of measure, and then estimate the injury as fractional parts of the whole, rather than the length in inches or centimeters.

And finally, one of the most vital causes of our incompleteness of information upon the number, as well as the extent, of the injuries occurring to the perineum during labor, is the failure of the physician to examine the patient after delivery, in order to ascertain just what the state of the parts may be. I speak advisedly, and of what I do know, when I say that, too often for her future comfort, he goes away without an idea of the mischief done, and she, so long as she has rectal and vesical control, believes that all is well, but finds, after she assumes her wonted duties, that she is *not* so strong as before her accouchement, and concludes "that her debility and discomfort arise from the fact that she is an *American* woman, and that she has been unfitted for maternity by having had too much education." But, alas for this pleasant little fiction! many women seek our private office and the treatment-room of the hospital who have neither college education nor perineums.

Now before discussing the *methods* of preserving the perineum, a review of the *causes* that render some form of interference necessary, will, perhaps, not be misdirected effort.

(1.) In cases when the sacrum is too perpendicular, thus making the propelling force to act more in the direction of the perineum than in that of the outlet of the parturient canal.

(2.) Where the pubic arch is too acute in its outline, thus preventing the head from filling the upper part of the arch, in which condition we have the force directed against the perineum with unusual energy. "A narrow pubic arch is practically the same as a *long* symphysis pubis, and the head must go farther down, in order that it may escape, than it would were the arch broad."

(3.) A thickened state of the urethra and of the subjacent parts has, curiously enough, been regarded as modifying the labor in the same manner as a narrow pubic arch. It certainly must do it only in a modified degree, if, indeed, it has a *noticeable* effect at all.

(4.) Too little inclination of the pelvis; this anatomical peculiarity increases the risks to the soft parts, because of the liability to rapid labors.

(5.) An excessive *width* of the perineum—the *centre* of it, consequently, receiving the force of the presenting part rather than directing it forwards.

(6.) *Too long* a perineum.

(7.) *Rigidity* of the perineal tissues or of the vaginal orifice. The texture of the vaginal tissue, though thinner than the perineal, is at the same time less distensible. The *age* of the patient too, if she be a primipara, may be calculated upon as predisposing to this rigidity, the condition of inelasticity being most common in aged primiparæ.

(8.) If the tissues have been weakened by disease; also the presence of old cicatrices.

(9.) Too much voluntary force exerted on the part of the patient.

(10.) The use of ergot.

(11.) The commonly quoted cause, namely, "the disproportion between the size of the fœtal head and the maternal passages," as well as the excessive length of the bis-acromial diameter, for the *head* may escape without producing a laceration and the shoulders or elbow produce one, or *extend* one already commenced. Indeed, the shoulders, from their irregularity of contour, may with propriety be regarded as more formidable opponents to the integrity of the perineal tissues than the head itself. They have, however, the advantage of a previously dilated canal.

(12.) Mal-presentations, as in face where the mento-occipital diameter is made to extend the vulvar orifice at least $1\frac{3}{4}$ cm. more than in vertex presentations of anterior varieties.

(13.) Mal-positions, as in posterior varieties of the vertex where extension of the head occurs backwards over the perineum. (Of course, I allude to those cases where internal rotation forwards has not occurred.)

(14.) The *awkward* use of instruments. Awkward position of the patient, and the same may be added of the accoucheur.

And lastly, but perhaps not least cogent, is the idea in the mind of the physician (if he be young in practice) that a "certain number of perineums will have to be sacrificed anyhow."

Now, after even a brief consideration of the foregoing causes, some of which are entirely opposite in character, we may with safety conclude that no single line of treatment will be applicable to all cases, but that the "management" must be such as will meet the exigencies of each particular case under supervision.

And as the first pre-requisite of successful "preservation," I would consider a thorough knowledge of the anatomy of the female pelvis and its organs as most essential. And side by side with this topographical anatomy, I would place a thorough and critical diagnostic examination.

The only safety is in *knowing*, and we can only know by an investigation of each and every case. We ought to know if the perineum be long or short; if there be much or little development of the parts that bound the vulvar orifice; if there be rigidity or relaxation; if tumefaction or œdema exist; the *size* of the vaginal and vulvar orifices; the persistence of the hymen; the condition of the vaginal walls, the presence of cicatricial tissue; if the bladder be distended or the rectum full; the condition of the pelvic walls and the dimensions of the pelvis as a whole, with the presentation and position of the fœtus. It seems to me the line of conduct is far plainer after coming into possession of these facts than before; in other words, the future of both patient and doctor is far safer.

And now after being thus armed with a complete understanding of our case, we will often find that many of the so-called causes of laceration are removable, and that a portion of the remainder can be rendered innoxious.

(1.) In this day and generation no perineum should be injured from the use of ergot. So long as the uterus is occupied by the fœtus, placenta, membranes or even coagula, ergot is strongly counter-indicated.

(2.) The awkward position of the patient and physician are quite within control. In the second stage of labor the left lateral decubitus for the patient upon the right side of the couch, reckoning from the head of the same, makes her easy of access and places the attendant, usually, where he has the most ease of motion.

(3.) Lacerations resulting from the *awkward* use of instruments are preventable in only one way, but the remedy is applicable to the physician and not to the patient.

(4.) Too much voluntary force exerted by the patient is rarely a just excuse for a tear, since an anæsthetic has come to form an unforgetable article of the armamentarium. And whilst we can thus control voluntary effort with our anæsthetic, we have at the same time a powerful opponent to *rigidity* of tissue. And in this stage of labor, I prefer chloroform to ether. I like, of course, to know that the condition of the heart and lungs is good, that no kidney trouble exists, and that there is no great probability of post-partum hemorrhage.

The condition of the rectum and bladder should *always* receive attention, no matter what the statement of the patient. A rectal enema of warm soap-suds should be a matter of routine practice, *if ever* routine practice *is* admissible. The use of the flexible catheter during the second stage, even if not unduly prolonged, is *good* practice, but not always easy. Of course, this kind of management implies the *early* attention of the physician, and it insures to the patient a great deal better service than many of them either appreciate or repay.

But what shall we do with the *perineum?* Do *not* support it. Manipulations directed to it destroy its integrity, the best results follow support of the presenting part rather than of the perineum itself. With two fingers in the rectum you have absolute control of the head after the mouth is accessible, and the presenting part should always be expelled in the *interval* of contractions. In many cases full control of the presenting part can be maintained by pressure upon it with the thumb and index finger without resort to the rectal touch (which touch is always offensive to the patient). And at no time during the expulsion should we lose sight of the mechanical relations. If there be too much flexion, favor the upward movement of the head towards the symphysis; this can best be accomplished from the rectum. Or if too early extension of the head occur before relaxation be complete, favor flexion by pressure upon the presenting part backwards towards the sacrum; "but if the axis of the fœtal cylinder is cutting the diameter of the vulvar circumference at a right angle, then will the cylinder pass through the ring with least damage to its margins, and to push upwards or backwards would be to spoil the rela-

tions" and be substituting meddlesome stupidity for intelligent assistance.

But what do in those cases where a tear is inevitable? Then resort to the *bi*-lateral incisions of the *vulvar* orifice. If the continuity of tissue must be destroyed control the locality, and as far as possible the extent of the tear. They should be made through the lateral margins of the orifice midway between the anterior and posterior commissures, and if the margins of the vaginal orifice form a constricting band over the presenting part then the incision should include the vaginal tissue also. Occasionally we need not include the vulvar tissue. A central tear of the perineum may commence as a tear of the vagina, but in the majority of these cases the borders of both the vaginal and vulvar orifices need to be included in the track of bistoury or scissors, whichever you may prefer to use.

The best made objection to these incisions is that they do not always prevent a central laceration of the perineum. But if they save but fifty per cent. of the otherwise unavoidable central tears they should not be abandoned.

They are not painful if made during a contraction, and union without suture is more probable than a central tear of even the same length, because they can be made out of the reach of the action of the transverse perineal muscles.

And in conclusion, although the *title* of my paper does not include the treatment of lacerations of the perineum when they have actually occurred, still I wish to add one more plea, and a positive one, to the many already so well made by others for the *immediate repair* of the injury. I quite fail to see why the repair is so often postponed. The benefits that accrue to the patient are incalculable, her consent usually easy to obtain; in fact, the morale at that time is very often better for the operation than at a subsequent period; whilst we have naturally all the attendant circumstances necessary for union (except the presence of the lochia). Then the sensibilities of the parts are reduced to a minimum and an anæsthetic not always indispensable. So that we have an operation of comparative ease, which by delay is convertible into one both painful and tedious. So, in view of even these facts, I would *insist* that the *immediate repair* of lacerations of the perineum be regarded as part of the *attending* physician's *duty*, and the *avoidance* of it punishable by at least a lower professional standing.

HYDRONEPHROSIS.

By JAMES W. KERR, M. D.,

YORK.

About thirteen years ago I saw J. H., a man aged 68 years, who had an enlarged abdomen, which to me was very peculiar in its appearance. On close examination it was entirely confined to his left side, extending from the diaphragm to the pubis, and limited by the linea alba, very irregular on its surface, much more prominent over the region of the spleen than below. There was flatness over its entire surface; no resonance whatever could be brought out; no signs whatever of disease of the heart, lungs, liver or kidneys. On puncturing at the highest point, I removed twenty-five pints of a grayish-yellow turbid fluid, after which the enlargement entirely disappeared. No tumors or irregularities of surface could be detected. In a few days the man was well, and continued to work for eight years, when precisely the same condition of things occurred, so slowly and without pain developing itself that he only became conscious of it by its bulk. The fluid, about twenty pints, was withdrawn. Three years afterwards the fluid had again accumulated, and eighteen pints again removed. In a few days the man, aged 81 years, died, apparently from the shock.

The fluid was analyzed, and about one-eighth of it was composed of albumen, with uric acid and epithelial cells. It was alkaline in its reaction; specific gravity, 1018.

A *post mortem* examination was made, and a sac strongly adherent to the diaphragm, the intestines, the lateral anterior and posterior walls of the abdomen, was removed; yet it was not broken.

After a long and careful examination no kidney could be found. Was it a dilated kidney?

HÆMATURIA.

By WILLIAM S. ROLAND, M. D.,

YORK.

This term is of Greek origin, and means bloody urine, or voiding of blood by urine, and, like other hemorrhages, it may be active or passive, and may come from the kidneys, ureters, bladder, prostate gland and urethra. There can be no difficulty in detecting blood when found in the urine, but the question of practical import is to determine From whence does it come? and here, in this connection, I quote from an article by Dr. F. K. Bailey, found in the *Philadelphia Medical and Surgical Reporter* (Vol. XXVI., p. 321) as follows:

"Watson says, 'Hæmaturia, strictly idiopathic, must be very rare.' Aitken only alludes to it incidentally in connection with albuminuria. Cullen remarks 'that he nor any of his friends had ever met with an instance.' Wood says, 'It is by no means common, except as an attendant upon inflammation of some portion of the membrane lining the urinary passages, and even under these circumstances is seldom so considerable as to claim particular attention.' Eberlee gives some excellent diagnostic circumstances which will guide us in giving locality to the origin of the blood voided from the bladder. Dunglison points out also the principal diagnostic marks to aid us in the study of cases which may come under our notice. Barclay, in his work on diagnosis, specifies many points to enable us to determine the origin of the blood, but says, 'These observations all tend to show that hæmaturia is almost constantly a symptom, though a casual one, of disease in some portion of the urinary apparatus.'"

I further quote from Sir Henry Thompson's lectures on diseases of the urinary organs, as follows: "What is the source of it? Now, it is often not an easy thing to state at once what point of that long and complicated organic apparatus, which

commences in the Malpighian corpuscles, and ends at the external meatus, is the sources of the blood in question, for sometimes it is exceedingly difficult to define its source. If the hæmaturia is the result of inflammation, there will be general fever denoting its presence; if produced by slow organic change, there will be history of failing health, and probably urine changed in quality otherwise than by mere admixture of blood."

Von Ziemssen and other writers tell us that hæmaturia is sometimes the first symptom of renal cancer, that it may sometimes be developed without any preceding pain,—and it is often impossible to make much out of this symptom, if it is quite isolated, though a renal hemorrhage arising without any external cause, and running its course without pain, is always to be looked upon with suspicion; another perhaps more reliable sign is the discovery of a tumor, which makes the diagnosis passably clear. Taking the best medical authorities as our guide, we infer that primary cancer of the kidney is considered a rare affection, and when it does occur, is usually confined to one kidney—the right one being most frequently attacked. The kidney may not be necessarily much enlarged, and the disease may run its course without giving any very prominent symptoms on which to base a satisfactory diagnosis, pain in the region of the loins may sometimes be the first symptom, and that may not denote much significance; the most important symptoms to be considered are the renal tumor and the hæmaturia,—the latter may be noticed at any early stage of the disease; but it is only the attending physician, who has made himself familiar with the experience of others, and who has the opportunity of seeing the patient during the entire course of the disease, noting in time a tumor, and the successive appearance of the hæmaturia, and all the other well-marked symptoms that are constantly brought under his notice, will be prepared to make a more easy and reasonably correct diagnosis than one who is not familiar with or who has only a partial knowledge of the case.

The above observations have been suggested by the following case which came under my special notice and care: Dr. T. L. C., a retired physician, aged 74 years, called on me at my office in the latter part of March, 1881, and stated that he was troubled with hæmaturia, and in answer to my question he said it had troubled him more or less at various times for the preceding eighteen months, and possibly longer, but the dis-

charge was usually so slight as not to cause him any uneasiness, but lately the flow of blood was increasing and beginning to alarm him; that he had taken quinine and tr. mur. iron, but the discharge still continued, though he really was not suffering from it, and thought he was gaining in flesh. The doctor at that time presented a fine personal appearance, bearing the impress of a well-preserved gentleman, with habits all good and temperate in all things. He looked the picture of perfect health and bodily strength, and he could not remember of ever having met with an injury at any time, nor could he give any cause for his affliction. I suggested to him to try fluid extract of ergot. A few days afterwards he reported that the ergot acted like a charm in arresting the bloody discharges. About two weeks thereafter he again reported that the flow had returned, and was very bad. I then said to him that I thought the trouble was in the bladder, and advised him to continue the ergot and drink freely of flaxseed or elm tea, which again had the effect of very much diminishing or nearly altogether arresting the discharge. Some time afterwards, about the middle of May, the doctor reported that the disease had again broken out, and was very much more obstinate, and lasting longer than the other spells; that he thought the discharges of blood on some occasions averaged a pint and more a day. He now, for the first time, complained of pain and a sensation of weight in the lumbar region, also pain and burning at the anterior extremity of the urethra.

I desire here to state that I never for a day lost sight of the case from the time of the patient first reporting himself to me, but was in daily intercourse and consultation with him, and during all the time of about seven weeks he was treated with ergot, hamamelis, gallic acid, matico, acid sulphuric, quinine, tr. mur. iron, etc., at such times and in such doses as the nature of the case seemed to indicate and warrant; he was also cupped and blistered over the lumbar region, and whilst he seemed to derive some benefit from the treatment, the discharge continued, with short intervals, more or less every day, and he was never entirely free from it for, perhaps, more than one or two days at any time.

On the 25th of May I informed him that I now had reasons for changing my opinion as to the location of the disease, and that I believed it was located in the right kidney; that it was

alarming in its character, but not necessarily immediately fatal, and suggested a consultation, to which he readily assented, and said we would go to Philadelphia. Accordingly on the next day we went to Philadelphia, and saw Dr. J. H. Brinton. The doctor made a thorough and searching examination, but failed to discover any signs of calculi, and said he did not believe there was any stone there. I then said to Dr. B. that the disease, in my opinion, was not in the bladder, but it was in the right kidney, and after giving my reasons he seemed to think, and so expressed himself, that possibly I was right, and said he had no suggestions to make regarding the treatment, other than what I was doing. On the 31st of May I wrote the following in a letter to Dr. Brinton: "Will you confidentially give me your opinion as to the character of our friend's disease? I have partially formed an opinion, but dread to name it. I hope I am wrong, and will most gladly accept any other name. There have at no time been such prominent symptoms as to lead me to think of diagnosing Bright's disease or calculi; but I fear cancer of the right kidney;" to which the doctor the next day replied as follows: "I am afraid your diagnosis is correct; our friend is evidently suffering from hæmaturia, and his face has a dreadfully cachectic look. Of course, we cannot tell the exact nature of his trouble. There are hardly the symptoms of renal calculus, so that we must look further. I fear that he will not improve, and I should doubt any therapeutic agent doing him much good."

During the month of June, there was at no time any marked improvement in the condition of the patient; when there was a diminution in the blood discharges, there seemed to be an increase in pain, and at times very severe, involving the loins, hip, thigh and leg of the right side; there was generally obstinate constipation, with occasional slight diarrhœa. On the 27th of May, and 22d of June, he went to Atlantic City, in hopes of being benefited by the change; but in each instance, after a few days' trial, he was obliged to return home, always feeling worse for the trip. About the middle of July, Dr. A. R. Blair, of York, was called into the case, and he agreed with me fully in my diagnosis; the same treatment was continued, but there was no change for the better, the pains were constant and severe, and the desire to pass urine was frequent and painful; sometimes the flow would suddenly cease, and after numerous hot-

water applications over the region of the bladder, large clots of blood would be forced out, and then, to give relief to his sufferings, large doses of opium were freely administered. The œdema in the right limbs, which had been coming on for some time, now increased rapidly, and there was also evidently a tumor in the region of the right kidney, which had been previously noticed. On the 27th of August, the right thigh and leg measured in circumference two and one half inches more than those of the left side, and on the 30th the dimensions had increased to four and one half inches; and he now complained, in addition to his other painful afflictions, of an agonizing pain, locating it about the last lumbar vertebra; over which, after using tr. iodine and other local applications, there was applied a compress, wet with a solution of atropia, and covered with oil silk, which he thought afforded some temporary relief. From this time on to about the middle of September, the blood discharges diminished, the pains were not so severe, and the œdema was getting less, his rest was not so often disturbed, and the anodyne doses were reduced, but he would take very little nourishment, and was all the time bed-fast, so that we did not feel much encouraged in hopes of any permanent improvement; for on the 20th of September, the volcano again broke out in great fury, the lower extremities, left side, now commenced to fill, and soon were as full as the right ones had been, the discharges of blood were large and frequent—difficult and painful, the pains in the back and along the course of the ureters, and running down both limbs, were alarmingly increased; quinine was continued, and stimulants at regular intervals were allowed, opium in large doses was freely administered; this plan of treatment seemed now to afford the only relief for his intense sufferings.

Professor Thompson says: "For alleviation of pain or frequency of micturition do not spare opiates, trying any form, or all forms in turn, until you find that which most assuages it and least disturbs the digestive organs. Give them by mouth, subcutaneously, or by suppository. Never mind how much in order to act effectually. It is not a question of saving life, but a question of mitigating that most frightful of human miseries —prolonged, continuous, severe bodily suffering—and this for a patient whose doom is certain, and to whom life has come to be, for the most part, a dire calamity. While you are bound,

therefore, on the one hand jealously to guard life, I hold that you are equally responsible, on the other hand, that it should be rendered fairly endurable."

During part of the intervening period up to October 21st, he seemed at times to suffer less pain, the œdema was less and, being about the same in both limbs, was kept down with bandages. From this date on there was no appetite, memory somewhat tardy, and mind occasionally, for a short time, wandering, and when asked what he was talking about, said they were only dreams—he was nervous and weak.

October 22d. Is getting weaker all the time, rests fairly quiet, except when disturbed by frequency of micturition—the desire coming on almost every half-hour; when he is not under the influence of opiates he is not disposed to talk any, but readily answers all questions when roused up; pulse running high and respiration is being interfered with, tumor on right side increasing and discharges chiefly blood. Authorities tell us: "In malignant renal tumor, blood may be large in quantity at times, and the rapidity of growth and the size attained are marked characteristics of the disease." From the 23d to the 28th of October, there was a continuation and aggravation of all the symptoms until he was released from his sufferings by death, which occurred on the 28th at 11.35 A. M.

The following is the analysis of the urine examined June 23, 1881:

Physical and chemical characters:

Color and appearance—smoky.

Odor—normal.

Reaction—slightly acid.

Sp. gravity—1023.

Albumen—nitric acid and heat tests separately and combined give about one-fourth albumen; ring tests give albumen.

Sugar—none detected.

Deposit—After standing twelve hours there is a dark red deposit not very abundant.

Microscopical appearance:

Crystals—None.

Anatomical elements:

Field full of red globules, very abundant; also some white globules.

Casts—No casts found in three slides examined.

Epithelial cells from bladder, ureter, and kidney.

Examined August 19, 1881:

Appearance—Smoky.

Reaction—Acid.

Sp. gravity—1018.

Albumen—Test gives about one-fifth bulk.

Sugar—None.

Deposit—Red, after standing over night.

Microscopic appearance:

A few of phosphates and oxalates.

Blood—Some red corpuscles, a large number of white or pus corpuscles.

Casts—None.

Epithelial cells—Rather abundant.

During the entire course of the disease, lasting about seven months from the date when I was first consulted, the patient at all times, except when suffering pain, was calm and resigned, and as to his condition he did not at any time speak of, complain or refer to the nature of his affliction. There unfortunately was no autopsy, and hence the true character of the disease must remain obscure forever. Nevertheless, my diagnosis shall remain unchanged.

CASE OF LACERATED PERINEUM.

OPERATION THREE HOURS AFTER LABOR, WITH PERFECT RECOVERY.

By WILLIAM M. FINDLEY, M. D.,

ALTOONA.

Mrs. T. D. H., æt. 26, of very delicate texture or tissue; has had rheumatic diathesis for several years. April 24, 1880, I attended her in abortion at four months; no very serious results. Some mitral and aortic bruits, and easily exhausted, although recovers rapidly afterwards. Was seen by me in labor at full period of gestation; pains moderately good, with favorable progress. The pelvis slightly shortened in the lateral diameter; vulvar opening small. Head in the first position of the vertex, and descent very slow. Perineum soft and pliable, but on the head impinging upon it, the perineum appeared to split in the median line, even from the inside and behind first, with scarcely any pressure upon it, and no effort could save from the impending disaster. The rent was complete into the rectum, and extended into the vagina some three (3) inches. Otherwise the labor was normal, and the placenta was expelled in due time. As my patient was somewhat exhausted, I allowed her about two hours to rest before operation.

The operation consisted in cleansing the raw surface with disinfectants and adjusting the edges with deep and superficial sutures as are required, and inserting a self-retaining Skene's catheter. The union was perfect after thirteen (13) days, during which there was no fever, the pulse rarely above 90, and the bowels constipated during the entire time, with some resulting headache and flushed face. At present she is enjoying good health, and no inconvenience from the injury or the operation.

The point in this case is that laceration does not *always* com-

mence at the fourchette, but, as in cases recorded where the child is extruded through the perineum, the rent *may* commence far up in the vagina, in even very pliable and easily distended perinei, and result in injury, much to the discomfort of the attending physician, who may not be able to prevent the trouble, and to the disadvantage of the patient.

ON THE USE OF ATROPIA IN DISEASES OF THE EYE.

By E. DYER, A. M., M. D., Harv.

Ophthalmic and Aural Surgeon to the Pittsburgh Free Dispensary and to the Pittsburgh Infirmary.

The introduction of a new drug requires time. If it proves valuable it will hold its place; but like all good things it is liable to abuse. I remember hearing a lecture soon after the introduction of iodide of potassium in which its superlative merits, its action in syphilis, skin diseases, and as an alterative, etc., were fully extolled. "But," said the lecturer, "I have yet to tell you what a boon it is to the profession. If you have carefully examined a patient physically, morally and mentally, and find yourself utterly unable to make a diagnosis and have not the least idea what is the matter with him, then give him iodide of potassium and the chances are that you will cure him." Too frequently atropia is used in this same happy-go-lucky way. I wish to suggest that it is not a *panacea*, and cannot be used freely in all inflammations of the eye. It is often a decided irritant to the inflamed conjunctiva, and should *never* be used without positive indications. These are easily summed up: iritis, irido-choroiditis, spasm of ciliary muscle, progressive myopia, rupture of anterior capsule intentional or accidental, and perhaps in perforating ulcer of the cornea.*

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* The value of atropia in these cases is questionable, as the instant the aqueous humor escapes the pupil contracts and the iris is drawn into the opening.

Where indicated, atropia should be used freely.*

℞

Atropia sulph.,	grams .25
Aquæ dist.,	30.00
	Misce.

three or four times in the day.

In recent cases of iritis, where synechiæ have formed, I have often been able to detach them by using the above solution every ten minutes in the hour for one hour, keeping the patient in a darkened room. Generally a little bit of pigment is left on the anterior capsule of the lens, but it is soon absorbed, or if not, it does not materially affect the vision. I need only hint here as to the great importance of breaking up these attachments, as they are well known to be the most frequent cause of recurrent iritis, and I never abandon the attempt until I have made four or five trials—one each day. It very rarely happens that the patient suffers from atropia-poisoning, but as sometimes the lachrymal duct is freely open, I suggest that twenty drops of laudanum may be at hand, and given if necessary.

In examining for latent hypermetropia, or spasm of the accommodation, it is useless to use a weaker solution than I have mentioned; but for examining a cataract or for using the ophthalmoscope a much weaker solution is preferable. I have little gelatine discs which contain only the fifty-thousandth part of a grain (Savory & Moore, London), which answer every purpose. The advantage of these weak applications is that the pupil contracts in one or two hours, thus saving the patient much annoyance.

It frequently happens that persons with incipient cataract, not fit for operation, and others where an operation is not advisable or cannot be obtained, derive much satisfaction from a dilated pupil. A drop of a solution†—

℞

Atrop. sulph.,	.06 grains.
Aq. dist.,	120.00 "

used two or three times a week will often, in such cases, do them no harm, but will tend greatly to mitigate the sorrows of old age, both for themselves and those who care for them.

* One gr. to four ounces.

† Grs. iv to the oz.

Mr. President:

The Committee on Medical Legislation beg leave to report that the bill, which was read in your hearing one year ago, passed the Legislature with the addition of section X., and amendments to sections II., III., IV., and VII. This Act of Assembly, providing for the registration of all practitioners of medicine and surgery, is herewith presented together with a synopsis of the same.

THE REGISTRATION ACT.

THE SYNOPSIS.

As soon as it was known that the Governor had approved of the action of the Assembly, a sample leaf of medical register and a copy of the law were sent to all the prothonotaries in the State and to the leading members of the profession. This was done that the work of registration might be commenced immediately, and that greater uniformity might be secured. Many letters were written in answer to inquiries, and the members of this society were especially urged to commence registration. A synopsis of the law was also printed and widely circulated.

With the hope of collecting statistics, and of thus bringing before the members of this society, in a forcible manner, the real situation of the profession in our State, a blank sheet was printed several weeks ago, and a copy of the same was sent to one of the officers of each county medical society,—usually to the recording secretary. A copy was also sent to the prothonotary of each county in which this society is not represented. Letters were written to all, in which a special request was made to fill up the blanks and return them to the chairman immediately.

As a result of this effort, your committee have the pleasure of presenting three tables of statistics. In the first, there is given in the column for each county the number of graduates of Pennsylvania medical schools, and the names of the institutions; there is also added a summary of the graduates of medical schools of other States, and of foreign countries, as well as the number of non-graduates registered in each county. We have thus presented in a tabulated form, not only the number of medical practitioners in each county, male and female, but we have the names of the institutions which have conferred the degree of doctor of medicine. Statistics from forty-six counties have been transferred to these tables, and with a little industry, statistics from other counties may be added, before the Transactions are placed in the hands of the printer.

With these statistical tables before us, imperfect as they are, what should be the feeling and the action of this society? There is surely enough presented here to humiliate the proudest in the profession, and there is ample scope given for the exercise of the wisdom of the best of us. With large numbers of bristling doctors in the field, armed with bogus diplomas, obtained from chartered institutions in our own and other States—eclectics, homœopaths, hygeo-therapeutists, vitopaths, electricians and irregulars of every description—what could your committee have done, more than has been done? By the use of means which no gentlemen in the profession would think of using, these pretentious classes of practitioners have made an impression upon the people, that they are the pioneers in medical science and art. Calling themselves *new-school* practitioners, and applying to us the odious epithet, *allopathic*, they go from house to house, advocating their theories and soliciting trade. Unfortunately, too, our Representatives carry with them into the Assembly of the State the theories and sentiments of these men; so that your committee have not dared to ask that restraints be placed upon any practitioner representing a chartered medical school. Nor have we dared to ask, that the non-graduate class of practitioners in our State be brought before a board of medical examiners. These and other branches of this complex subject, remain to be considered, and acted upon by our Legislature, though it is certain that the non-graduating class must soon disappear under the faithful execution of the present law; and we have reason to believe from the experience

of a few counties, that a little pressure and firmness on the part of the county medical societies will drive many of the bogus-diploma practitioners out of the State.

The enforcement of the Registration Act is therefore the first duty of the profession. Let each county consider itself a unit, having its own court, its own prothonotary, its own justice of the peace, and its own constable. Let there be a registration committee appointed by each county medical society to supervise registration, and to report to the society at every meeting, giving a full account of the condition of the register. Let there be resolutions passed by the society, and let the secretary be authorized to send a copy of them to each delinquent or bogus-diploma practitioner who is registered, giving him or her ten days to leave the county or stop practice. Measures of this kind have already worked like a charm in several counties, and respectable practitioners are beginning to feel themselves masters of the situation. The old adage, "The Lord helps those who help themselves," is not limited to the actions of every-day life.

But there is an important feature of this Act of Assembly to which your committee desire to ask the attention of this society. We refer to the duties imposed upon the faculties of our medical schools. In Section Four they are constituted the sole judges of the qualifications of the practitioner in the future. To use a figure of speech, they have become the gateways through which the practitioner enters the profession. They have authority both to open the gate and to close it, and may we not hope that they will very frequently close it? An objection may be raised that there is room here for an arbitrary exercise of power, but it should be remembered that the faculties are the representatives of the leading schools of practice in our State, and have the confidence of the people; and besides, this power lodged in their hands will likely be as judiciously used as it placed in the hands of an examining committee appointed by the Governor of the State.

A question arises here: Will the profession, in the several counties of the State, see that this important feature of the law is enforced? If so, we may hope to see in a few years a decided change in the tone and character of the profession in Pennsylvania.

In conclusion, your committee desire to congratulate the profession on the good work which has been done all over the State during the last ten months.

R. L. SIBBET, *Chairman.*
C. A. RAHTER, Dauphin.
BENJ. LEE, Philadelphia.
TRAIL GREEN, Northumberland.
J. L. STEWART, Erie.
JOHN L. ATLEE, Lancaster.
J. FRANK ROSS, Clarion.

	University of Pennsylvania.	Jefferson Medical College.	Pennsylvania Medical College.	Woman's Medical Col.	Hahnemann Medical College.	Homœopathic Medical College.	University of Philadelphia.	Penn Medical University.	Philadelphia University of Med. and Surg.	American University of Philadelphia.	Eclectic Medical College.	Philadelphia Electropathic Institute.	Franklin Medical College.	Penn Medical College.	Penn Medical Institution.	Philadelphia College of Medicine.	Medical College of Pennsylvania.	Philadelphia Medical College.	Medico-Chirurgical College.	Female Medical College.	Allentown Medical College.	Eclectic Medical Association.	The Graduates of Pennsylvania Schools.	The Graduates of Schools in other States.	The Graduates of Foreign Schools.	The Whole Number of Graduates Registered.	The Non-Graduates Registered.	The Whole Number of Medical Practitioners Registered.	The Probable Number of Non-Registered Practitioners in Pennsylvania.
																							Whole No. Fem.	Whole No. Fem.	Whole No. Fem.	Whole No. Fem.	Whole No. Fem.	Whole No. Fem.	
1. Adams,	11	8			3						2				1								25	29		54	6	60	None.
2. Allegheny,	38	120	1	1	23	9			3		2	2						1					201	169— 1	22— 4	392— 5	72— 2	464— 7	
3. Armstrong,	2	26														1							29	26	1— 1	56— 1	8	64— 1	
4. Beaver,	3	9			1																		13	39		52	17	69	Cannot say.
5. Bedford,	5	15															1						21	9		30	7	37	
6. Berks,	48	69	21		7	1				1	1												148	20	5	173	35	208	
7. Blair,	18	18			2	1			3	1	4												47	14		61	4	65	About 30.
8. Bradford,	6	15	1		1	4				2	4	2											36	42		78	35	113	Safe to say 5.
9. Bucks,	34	28	2	1	7	1		1								3				1			78— 2	12		90— 2	4	94— 2	None.
10. Butler,	3	20																					23	35	1	59	4	63	Not more than 3.
11. Cambria,	4	15	1	1	1					1													23	22		45	11— 1	56— 1	None.
12. Cameron,		4																					4	3		7	2	9	
13. Carbon,	9	6	3		1	1																	20	10	1	31	10	41	Only 2.
14. Center,	17	13			2		1							2									35	6		41	11	52	About 5.
15. Chester,	46	42	3	1	8	8			4						3			4					119— 3	9— 1		128— 4	3	131— 4	About 12.
16. Clarion,	5	11		1																			17	24	1	42	11— 2	53— 2	
17. Clearfield,	7	17	1		3						3												31	9		40	8	48	About 15.
18. Clinton,	10	9		1	1	2											1						24— 1	4		28— 1	1	29— 1	About 3.
19. Columbia,	4	16	3		2	1			1		1					1							29	13		42	3	45	None.
20. Crawford,	9	4	2	1	2				4														22— 1	67	2	91— 1	35	126— 1	Not more than 1.
21. Cumberland,	15	29	3		5	1			1		1												55	19		74	15— 1	89— 1	Only 2.
22. Dauphin,	45	31	4	1	4	1		1	1	1	2						1	2					102— 3	32— 1	1	135— 4	16	151— 4	About 5.
23. Delaware,	27	16		1	6	1					2					1							54— 1	6	1	61— 1		61— 1	
24. Elk,		4	1							2													7	10	3	20	1	21	
25. Erie,	5	6		1		1				3	1												17— 2	65— 5		82— 7	21— 3	103— 10	None.
26. Fayette,	6	26			1				1														34	23		57	25	82	About 5.
27. Forest,		2							1														3	1		4	4	8	None.
28. Franklin,	9	27	6		2											1							45	18		63	7— 1	70— 1	About 4.
29. Fulton,	4	4	1																				9	3		12	2	14	None.
30. Greene,		15																1					16	11		27	22	49	
31. Huntingdon,	8	13							1														22	16	1	39	6	45	Only 1.
32. Indiana,	2	28									1		1										32	17		49	11	60	Only 2.
33. Jefferson,	1	11							2														14	10	1	25	16	41	
34. Juniata,	4	3																					7	7		14		14	About 5.
35. Lackawanna,	12	12	5	1		1		1	1		2												35	49— 2	2	86— 2	18— 2	104— 4	
36. Lancaster,	42	88	13	2	5	4	3				1							1					159— 2	28	1	188— 2	28— 2	216— 4	
37. Lawrence,		14			2																		16	34	1	51		51	
38. Lebanon,	21	13	4		3	1											2						44	8		52	7	59	About 20.
39. Lehigh,	31	25	1			5				1	1					2							66	22	2	90	6	96	
40. Luzerne,	27	34	6		5		3		2		2					1							80	34	9	123	35— 2	158— 2	About 5.
41. Lycoming,	18	25	9	1		6	2																61— 1	12	1	74— 1	5	79— 1	None.
42. McKean,	3	4							3														10	63	3	76	11— 1	87— 1	
43. Mercer,	9	9							1		1												20	46	1	67	14	81	
44. Mifflin,	10	9									2							1					22	12		34	1	35	
45. Monroe,	9	9			2				1														21	2		23	6	29	Only 1.
46. Montgomery,	46	42		4	12	3			1		1			8				5					122— 4	5		127— 4	3	130— 4	
47. Montour,	7	6			1																		14	4— 1	1	19— 1	1	20— 1	
48. Northampton,	42	43	1		1						1		1										89	18	1	108	6	114	Not more than 6.
49. Northumberland,	11	32	4		6	1				1							1			1		1	58	18	2	78	12	90	Only 3.
50. Perry,	10	6	1				1			2	1						2						23	15	1	39	8	47	
51. Philadelphia,	554	448	41	40	144	60			27		17		2	23		2		17	4	1	1		1,381—45	90	21	1,492—45	52	1,544— 45	About 150.
52. Pike,	1		1								1												3	2		5	1	6	Only 3.
53. Potter,		1																					1	6		7	13— 1	20— 1	About 4.
54. Schuylkill,	36	29	1	1	9				1	1	3												81— 1	19	3	103	17	120	
55. Snyder,	3	12	2																				17	9	1	27	1	28	About 4.
56. Somerset,	4	7	2						3							1							17	13		30	16— 1	46— 1	None.
57. Sullivan,	1	3														1							5	1	1	7	5— 1	12— 1	None.
58. Susquehanna,	4	5								3								1					13	25	1	39	16	55	
59. Tioga,	2	4				2					4												12	34— 1	2	48— 1	29	77— 1	About 6.
60. Union,	6	6	1	1	1												1						16	10		26	1	27	None.
61. Venango,	2	6					3				3					1							15	26	1	42	10	52	About 5.
62. Warren,	3	1									1					1							6	42	1	49	11— 2	60— 2	About 25.
63. Washington,	12	30			1			1			2												46	40	1	87	27	114	Three.
64. Wayne,	2	5									1												8	15	1	24	11— 1	35— 1	Don't know.
65. Westmoreland,	4	45			3						2												54	38		92	17	109	
66. Wyoming,	1	3									1												5	9		14	12	27	
67. York,	18	31	5		10												1						65	65		130	14	144	
	1356	1695	150	60	287	115	10	5	63	19	71	4	4	33	4	16	10	33	4	3	1	1	3,947—66	1,610—12	97— 5	5,654—82	838—23	6,492—105	

:m.	The Whole Number of Medical Practitioners Registered. Whole No.	Fem.	The Probable Number of Non-Registered Practitioners in Pennsylvania.
	60		None.
2	464—	7	
	64—	1	
	69		Cannot say.
	37		
	208		
	65		About 30.
	113		Safe to say 5.
	94—	2	None.
	63		Not more than 3.
1	56—	1	None.
	9		
	41		Only 2.
	52		About 5.
	131—	4	About 12.
2	53—	2	
	48		About 15.
	29—	1	About 3.
	45		None.
	126—	1	Not more than 1.
1	89—	1	Only 2.
	151—	4	About 5.
	61—	1	
	21		
3	103—	10	None.
	82		About 5.
	8		None.
1	70—	1	About 4.
	14		None.
	49		
	45		Only 1.
	60		Only 2.
	41		
	14		About 5.
2	104—	4	
2	216—	4	
	51		
	59		About 20.
	96		
2	158—	2	About 5.
	79—	1	None.
1	87—	1	
	81		
	35		
	29		Only 1.
	130—	4	
	20—	1	
	114		Not more than 6.
	90		Only 3.
	47		
	1,544—	45	About 150.
	6		Only 3.

NAMES OF PENNSYLVANIA MEDICAL SCHOOLS.

	No. of graduates of each.
University of Pennsylvania,	1,356
Jefferson Medical College,	1,695
Pennsylvania Medical College,	150
Woman's Medical College,	60
Hahnemann Medical College,	287
Homœopathic Medical College,	115
University of Philadelphia,	10
Pennsylvania Medical University,	5
Philadelphia University of Medicine and Surgery,	63
American University of Philadelphia,	19
Eclectic Medical College,	71
Philadelphia Electropathic Institute,	4
Franklin Medical College,	4
Penn Medical College,	33
Penn Medical Institution,	4
Philadelphia College of Medicine,	16
Medical College of Pennsylvania,	10
Philadelphia Medical College,	33
Medico-Chirurgical College,	4
Female Medical College,	3
Allentown Medical College,	1
Eclectic Medical Association,	1
	3,947

NAMES OF THE MEDICAL SCHOOLS OF OTHER STATES.

	No. of graduates of each.
Bellevue Hospital Medical College,	175
University of Maryland,	95
" " New York,	53
" " Michigan,	95
College of Physicians and Surgeons, Baltimore,	125
Rush Medical College,	16
Long Island Medical College,	39
Western Reserve Medical College,	91
College of Physicians and Surgeon, N. Y.,	28
University of the City of New York,	51
Cleveland Medical College, Ohio,	74
University of Vermont,	12
Central Medical College, Rochester, N. Y.,	6
Dartmouth Medical College,	6
University of Buffalo,	67
St. Louis Medical College,	4
Chicago Medical College,	7
Bowdoin Medical College,	4
Columbia Medical College, N. Y.,	9
Detroit Medical College,	10
College of Homœopathic Physicians and Surgeons, Mo.,	4
Homœopathic Medical College, Cleveland,	34
Western Homœopathic Medical College,	4
New York Homœopathic Medical College,	20
Homœopathic College, Ohio,	15
Hahnemann Medical College, Ill.,	10
New York Medical University,	3
University of Louisville, Ky.,	6
Albany Medical College,	24
Wooster University,	40
New York University Medical College,	5
Harvard Medical College,	10
Washington University, Baltimore,	22
Miami Medical College,	34
Medical College of Ohio,	30

	No. of graduates of each.
Cincinnati College of Medicine and Surgery,	31
Cincinnati Medical College,	14
University of Georgetown, D. C.,	5
Starling Medical College,	11
Kentucky School of Medicine,	7
Eclectic Medical College,	39
Pulte Medical College,	8
Eclectic Medical Institute, Ohio,	32
American Medical College, St. Louis,	4
College of Physicians and Surgeons, Keokuk,	6
Physio-Medical College, Cincinnati, O.,	11
Eclectic Medical College, N. Y.,	22
University Medical College, N. Y.,	6
Unites States Medical College, N. Y.,	8
Hygeo-Therapeutic College, N. Y.,	7
Georgia Eclectic Medical College,	1
Memphis Medical College, Tenn.,	1
St. Louis College of Physicians and Surgeons,	2
Willoughby University,	3
Missouri Medical College, St. Louis,	2
University of Tennessee,	1
Detroit Homœopathic Medical College,	1
Medical College of South Carolina,	1
Phisie Medical College,	3
University of Cincinnati, O.,	1
National Medical College,	6
Botanic Medical School, O.,	2
Geneva Medical College,	17
Rensselaer Medical School, N. Y.,	1
Buffalo Medical College,	8
Berkshire Medical College,	10
Fairfield Medical College,	1
Louisville Medical College, Ky.,	4
Columbus Medical College,	13
University of Cleveland,	1
Columbian Medical College, D. C.,	5
Castleton Medical College,	14
Medical College of Virginia,	1
Williams College, Mass.,	2
Charity Hospital Medical College,	4

	No. of graduates of each.
Washington Medical College, Baltimore,	3
Georgetown Medical College,	3
Lind University, Ill.,	1
Iowa State University,	3
Medical Department, Transylvania,	1
New Orleans Medical School,	1
University of Boston,	4
" " Nashville,	2
Yale Medical College,	9
Georgia Medical College,	1
Metropolitan Medical College,	3
University of Geneva, N. Y.,	4
Medical and Surgical College, N. Y.,	1
Howard University, D. C.,	3
Woman's Medical College, N. Y.,	1
Hygeo-Therapeutic College, N. J.,	4
Castleton University, S. C.,	1
Baltimore Medical College,	1
University of Virginia,	2
New York Medical College,	3
University of Hudson,	1
American Health College, Ohio,	2
Syracuse Medical College,	2
Savannah Medical College,	1
Vermont Medical College,	1
Unintelligible,	5
	1,610

NAMES OF FOREIGN MEDICAL SCHOOLS.

	No. of graduates of each.
University of Edinburg,	2
" " Glasgow,	4
" " Wurtzburg,	9
" " Dublin,	1
" " Göttingen, Ger.,	7
" " Tübingen, "	5
" " Marburg, "	1

	No. of graduates of each.
University of Freyburg, Ger.,	1
" " Leipsic, "	2
" " Vienna, Aust.,	3
" " Frederick Wilhelm,	2
" " Victoria, Can.,	3
" " Jena, Germ.,	3
Julio Hospital Medical College,	1
Georgia (Augusta) Medical College,	1
Monz Medical College, France,	1
Queen's College, Ireland,	3
Gratz Medical College, Aust.,	1
Zurich Medical College, Switzerland,	1
Royal College of Surgery,	2
Hebamman Medical College,	1
Midwife Institute, Baden,	1
Berlin Anatomical Academy,	1
University of Berlin,	2
" " Heidelberg,	1
Germania University,	1
Royal College of Medicine, Ed.,	2
College of Physicians and Surgeons, London,	1
Trinity College, Toronto, Can.,	2
College of Herford, Ger.,	1
Germania Medical College, Vienna,	1
Academia Ludoviciana,	1
Ludwig Maximillian University,	1
Royal College of Surgeons, Ireland,	6
Royal Bavarian School of Midwifery,	2
Medical College of Stuttgart, Ger.,	1
University of Strassburg,	1
Eclectic Medical College of Toronto,	1
University of Prague,	2
" " Geisen, Ger.,	1
" " Kiel,	1
" " Amsterdam,	1
McGill University, Can.	1
Vienna Medical College,	1
Tübingen Medical College,	1
University of Buda, Pest,	1
Aberdeen Medical College,	1

	No. of graduates of each.
University of Erlangen,	1
" " Konigsburg,	1
" " Breslen,	1
" " Munich,	1
	97
Non-graduates registered,	838
Whole number registered under the Act of 1881,	6,492

Of the whole number of practitioners registered, 105 are females.

In most of the counties registration has been completed, but there may be five hundred who have not registered.

REPORT OF THE DELEGATE TO THE MASSACHUSETTS MEDICAL SOCIETY.

Your delegate to the centennial meeting of the Massachusetts Medical Society presented himself June 7, 1881, with his credentials from the Pennsylvania State Medical Society, and was invited to a seat on the platform, the meeting being held in Saunders Theatre, at Cambridge, with the visitors, delegates, and officers of the Society He listened with interest to the able historical address delivered by Samuel A. Green, M. D., of Boston.

At the close of the address, by invitation of the President and Fellows of Harvard College, he took luncheon with the members in Memorial Hall. President Eliot, in behalf of the President and Fellows of the College, welcomed the Society in a few fitting words, to which Dr. Williams, president of the Society, made an able reply, in which, after returning thanks for "the large and graceful hospitality," he stated that "it is to the fostering care and willing co-operation of the College with the society that the standard of education in the Medical School has been kept so high as to place its graduates far above the level of charlatans and pretenders."

At 12.45 P. M. the Society, with the invited guests, proceeded from Cambridge to Rowe's Wharf, Boston, whence, by invitation of the profession of Boston and vicinity, they embarked for an excursion by steamer in the harbor. During the evening, from 7.30 to 9, the trustees of the Museum of Fine Arts, in Boston, received members of the Society, with ladies; and at a later hour Dr. Williams, president of the Society, received at his house, where they were most hospitably entertained.

On the second day a very interesting comparative and historical exhibition of instruments, apparatus, books and medicines, was opened in Horticultural Hall, Boston.

Beginning with the fifteenth century, many of the most important and most curious specimens of medical literature which the world has produced were collected and arranged in a manner calculated to furnish a graphic idea of the evolution of medical science. The marked feature of the exhibition, however, was the series of illustrated anatomies, many beautiful specimens of art from the domain of pathological anatomy and surgery being included.

The materia medica exhibit, divided into ten groups arranged on each side of a passage on the right of the hall, attracted my special attention by its novel and picturesque appearance. The pressed medicinal plants from the Gray Herbarium at Cambridge papered the wall at one end of the hall, the botanical models from the College of Pharmacy covered a large table near the entrance, and hundreds of bottles from the cabinets of the College of Pharmacy and the Harvard Medical School were arranged along either side, interrupted only on the left by Mr. Sheppard's rare and complete collection of pharmacopœias and dispensatories.

The observer of surgical novelties was carried directly back over the hundred years by two surgical cases of Jeffries and Warren, which were used on the opposing sides during the Revolution, but lay peacefully side by side in the hall. Waterhouse's lancets lay by the side of his silver snuff-box, in which vaccine lymph is reputed to have been sent him by Jenner.

The gynæcological instruments showed the development of the speculum and pessary into their present forms, one of the latter bore a striking resemblance to a pessary now largely sold under the name of a modern gynæcologist.

A collection of old obstetrical instruments presented a marked contrast to the neighboring armamentarium of the obstetrician of to-day; and a stethoscope, given by Laennac to Dr. Bowditch, looked strangely rude by the side of the polished instruments of the present day.

The Society met in Horticultural Hall, Boston, on Wednesday, June 8, 1881, at eleven o'clock A. M., for the centennial anniversary exercises; the president, Dr. H. W. Williams, in the chair. After the regular order of business was concluded, the delegates from seven States were introduced and welcomed by the President.

Drs. Laughlin, Wolcott and Turnbull offered words of

greeting from their respective societies. At twelve o'clock the annual discourse on "Medical Societies, their Organization and Work," was delivered by J. Collins Warren, M. D., of Boston.

At one o'clock P. M. the Society adjourned to the Music Hall, in which the anniversary dinner was served, plates having been laid for one thousand guests. The menu was everything that could be desired to gratify the appetite, but the best part of the feast were the admirable addresses, and the splendid poem of the renowned medical poet, Oliver Wendell Holmes, M. D.

Respectfully,

LAURENCE TURNBULL, M. D.

REPORT OF COMMITTEE ON DEFECTIVE HEARING OF LOCOMOTIVE ENGINEERS, FIREMEN AND CONDUCTORS.

Your committee would most respectfully report, that, according to the resolutions passed at the meeting of the Medical Society of the State of Pennsylvania, copies of the first report and resolutions were sent to the presidents and superintendents of all the railroads in the State and members of the Legislature of Pennsylvania. The subject of the defective hearing of locomotive and other engineers has elicited much interest, and we are also happy to state that the Pennsylvania Railroad has adopted the following rules in regard to the hearing of those in their employ, to be carried out by the superintendent. We trust the other railroads of the Commonwealth will follow its example. This result has been obtained mainly through the personal efforts of our colleague, Dr. William Thomson, as follows: A competent person is to note the number of feet or inches distant from each ear at which a watch having a loud tick is heard distinctly, using a stop watch, to detect any supposed deception; and the number of feet at which ordinary conversation is heard.

"In testing as to hearing, if a person who has good ears hears the watch at five feet distant, and the person examined hears it only at one foot, his hearing would be 1–5, and may be recorded in fractions. Conversation in an ordinary tone should be heard at ten feet."

"It should be understood that all employees examined, failing to come up to the requirements of the above standard, shall be accorded the benefit of a professional examination."

The above method has been submitted to a practical experimental test extending over nearly two thousand men, employed as conductors, engineers, firemen and brakesmen, and the results have satisfied Dr. Thomson of its practical utility. As an

evidence of this he cites* two complete detailed reports including 1383 men in all, who were in the service of the Pennsylvania Railroad, and, of this number, 21 were found defective in hearing.†

"That to secure the confidence of the employees and of competent scientific critics, as well as of the public generally, it is advisable to have some efficient professional specialist to whom all doubtful questions could be referred, and who should be held responsible for the accuracy of instruments, tests to be put in use, and who should have general supervision of the entire subject."

Dr. Thomson's method having had the approval of the Board of Directors, he has been appointed the expert to whom, under the rules, such cases should be referred.

It will be well to compare the results of the examination of Dr. Thomson with another branch of service, namely, the military, who are not so much exposed, except in time of war, and show how important for the United States Government to excite a livelier interest in otology among its surgeons, since there are many in its army whose health and usefulness suffer from ear affections, and indeed many who lose their lives simply from a want of knowledge on the part of their physician and surgeon. The reports of the health bureau of the Prussian and Wurtemberg armies for 1874–78 show that during those four years there were removed on account of ear disease,—

Died,	23
Rendered unable to perform duty,	1701
Partial invalids,	33
Complete invalids,	126
Total,	‡1883

I have also found that both military and naval surgeons, owing to the want of final examination in practical details in treating the diseases of the ear, are so much at a loss that they allow obscure cases of disease of this organ to continue for months without efficient treatment.

The objections to the use of the watch *alone* as a test of

* Medical News, January 14, 1882, p. 38.

† *Op. cit.*, p. 40.

‡ E. Weil, Archives f. Otology, March, 1882, p. 54.

the defective hearing of locomotive engineers, conductors, etc., is that it has but two tones or sounds, or two notes of the musical scale, and certain individuals will hear conversation with ease, and yet be unable to distinguish the ticking of a watch, except when pressed against the ear. The perception of these tones does not furnish us any knowledge as to the condition of the ear in general, and especially as to its capacity of hearing the human voice.

We would advise that several other tests should be employed, as speaking tubes and bells, whispering, and certain agreed sentences of uniform value. The eyes should also be closed. A fine-toned or muffled bell should also be employed for a certain defined distance in the open air.

Your committee sincerely trust that the railroads all over the country will follow the example of the Pennsylvania in the care of the lives of the public, which are placed so unreservedly in their hands, for Professor Vose estimates that the number of persons annually killed and injured in the United States, directly and indirectly, by the railroads, is about 10,000 yearly.

All of which is respectfully submitted by the committee.

LAURENCE TURNBULL, M. D.,
Chairman.

APPENDIX TO REPORT.

Since my former paper on this subject, and the prompt action taken by the Pennsylvania State Medical Society, I have from various sources collected some additional facts in regard to this important subject, which I desire to bring before the Society. I have examined conductors in charge of trains on one of the best railroads in this country, and found that some of them were so defective that they could only hear a sixteen-foot watch at five inches, and when tested by watch, tuning-fork and certain sentences, showed themselves unfit to take charge of a fast train. When placed under our care at Jefferson Hospital clinic, and by constant attention to their ears, we were able to double their hearing distance, but they were not all able to remain long enough to be completely cured.

An engineer in charge of a stationary engine, who had to detect a certain delicate sound, became so deaf that with his right

ear he could only hear one inch when tested by a sixteen-foot watch.

The following facts were testified to by experienced engineers, who must depend largely upon their organ of hearing in order to assure the safety of the many lives entrusted to their care and skill: "The sharp crack of a broken crank, the dull thud of a shattered connecting-rod—in short, any of those obscure noises which signalize the approaching disability of a great machine, and any of those accidents which interfere with smooth running, may often, if readily discovered, save largely both of life and property.

"A veteran engineer says that two years ago a slight difference in the aggregate quality of the tones which came to his ear caused him to stop his train and look over the engine. 'I found the trouble,' said he, 'to be due to the loosening nuts of two cylinder heads, which had been put in place without the usual precautions to prevent their working off. Had they done so, I would have carried in a crippled train, and changed the whole business of the road for some hours.' 'Then you consider quick and reliable hearing of importance to the locomotive engineer?' 'No man,' he replied, 'has a right on an engine who has not all of his senses in perfect running order. The very feel of an engine when she is running is of the highest importance. A moment of rashness on the part of the engineer might in some instances lose him his engine.'"

The driver of a Hudson River Railroad locomotive said: "I was affected with deafness but once. There was some heavy artillery firing in Yonkers which lasted about ten minutes; my ears were very sensitive, made so, I think, through the habit of careful listening, and the moment I started up I felt there was something wrong about my hearing. At the end of ten days I put myself under the care of a physician. He found the trouble a considerable distance inside, and told me the concussion of the air had affected me. I was all right in ten days."

Investigation shows this disability most prevalent on tunneled roads, and generally accompanied by frequent colds, pains, roaring and ringing in both ears, subjective noises, or those having apparently no exterior cause.

It would be well if the examination be made every two years in the case of those who run on such roads. For while it is true that thorough and conscientious engineers are very careful

in looking out for themselves, beginners show some disposition to conceal rather than use the means to effect a cure of their disability.

It is also recommended that certificates be withheld until after examination, and when firemen present themselves for promotion special precaution be taken, and instruction given that ear troubles are likely to be induced by their occupation, and that they should report them at once and be treated.

REPORT OF DELEGATE TO THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

CHAMBERSBURG, May 9, 1882.

To the Medical Society of the State of Pennsylvania:—

Having been appointed one of your delegates to the Medical and Chirurgical Faculty of Maryland, I attended the annual meeting of that society, being its eighty-fourth meeting, which assembled in Hopkins Hall, Baltimore, April 11th, continuing in session five days, Dr. Frank Donaldson presiding, with an attendance of sixty members and delegates from different sections of the State. On being introduced as Pennsylvania's delegate, I received a hearty welcome. The annual oration was delivered by Dr. A. M. Fauntleroy, of Virginia, the subject being "The Reciprocal Action of Morbid Bodily and Mental Influences."

The papers read were of a high order, particularly those by Professor H. Newell Martin, M. D., on "The Influence of Variations of Arterial Pressure, of Venous Pressure and of Temperature upon the Pulse Rate of the Isolated Mammalian Heart;" by W. H. Howell, A. B., and F. Donaldson, Jr., A. B., "On the Form of the Pulse, and on the Mean Pressure in a Dog with Permanently Open Ductus Arteriosus;" by Dr. W. Sewell and F. Donaldson, Jr., entitled "The Influence of Increase of Venous and Arterial Pressure upon the Cardio-Inhibitory Action of the Pneumogastric Nerve;" H. H. Donaldson, A. B., and M. Warfield, "On the Variation in the Work of the Heart under Digitaline,"—were of marked excellence, and remarkable in point of scientific research. The reports of the various sections were all able papers, and instructive in all of the advances of medical science to the present time, as were also the volunteer papers.

To give such a report as would do justice to this meeting would consume too much of your valuable time. The meeting

of the "Faculty" was in all particulars a success, and the interest felt in it was noticeable and gratifying.

A hearty interest was felt in the growth and prosperity of the library, now valued at $7,000, and the proposed plan for securing a library building at no distant day.

Their volume of Transactions will be one of the most valuable contributions to the medical literature of the year.

Thanking you for the honor you have conferred upon me in selecting me as a delegate, and regretting the absence of my colleagues upon this occasion,

I am respectfully,

JOHN MONTGOMERY.

REPORTS

FROM

COUNTY MEDICAL SOCIETIES.

FORM OF COUNTY REPORTS TO THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.*

I.—CAUSES WHICH MODIFY THE HEALTH OF THE COUNTY.

1. LOCALITY:

Boundaries of county, and its situation in the State.

Its proximity to large rivers and the lakes; to mountain ranges; their direction and extent.

2. HYDROGRAPHY OR DRAINAGE:

Size and direction of watercourses, and of the dividing ridges, or water-sheds.

Extent of river bottom.

Power and rapidity of streams; danger and frequency of inundation.

Quantity of marshy or springy soil.

Artificial water channels and reservoirs; amount of lockage.

3. TOPOGRAPHY:

Area and mean altitude of county.

Population and their lineage; chief avocations.

Location and size of principal towns.

General character of surface; principal valleys and eminences.

Nature and extent of surface destitute of vegetation, tilled, covered with forest, or in grass.

Agricultural produce; kinds of timber; effects of clearing and of drainage on climate; extent of artificial irrigation.

4. GEOLOGY:

Geological position, actual location, dip, direction, and extent of the different formations.

Character of soil, subsoil, and subjacent rock.

* See printed Transactions, Vol. V., p. 52.

Source and nature of water used for domestic purposes.
Supply of water to towns; kind of pipes used as conduits.
Map with geological features named, and colored agreeably to the order adopted by the State Geologist.*

5. METEOROLOGY: †

Latitude, longitude, and altitude of observer.
Barometric, thermometric, and hygrometric states of the atmosphere for every day in the year, indicating, in columns, the amount in inches of rain, hail, and snow.

II.—MORTUARY TABLES.

1. MORTALITY:

From fevers; from measles, small-pox, and varioloid.
From diseases of the lungs and air-passages.
From diseases of the nervous system.
From diseases of the organs of nutrition.
From diseases of the urino-genital organs.

2. CAUSES assigned for death where the number exceeds 10 per cent. of the whole.

3. QUARTERLY TABLES, showing the whole number of deaths of white and of colored persons under 1 year, from 1 to 2, from 2 to 5, from 5 to 10, from 10 to 15, from 15 to 20, and for every decennial period over 20.

III.—PREVALENT DISEASES.‡

1. EPIDEMICS AND ENDEMICS OF THE YEAR:

Their origin and march; apparently contagious or not; how affected by race, age, sex, temperament, avocation, circumfusa, ingesta, and the density of population.

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* Inclose, by dotted lines with proper marginal references, those sections of the county in which epidemics have prevailed.

† Observers for the Franklin Institute, Philadelphia, as well as for the Smithsonian Institution, Washington, reside in a number of the counties, and would furnish all the meteorological information required. See page 16, Part III., 1858.

‡ If, as is to be feared in many counties, the materials for this classification cannot be obtained, the reporter is requested to approximate as closely to it as his means of information will admit.

‡ In describing cases, give the age, sex, condition, and location of patient, season of year, treatment, and termination.

2. Fevers:

Intermittent and remittent; their frequency as compared with that of former years.

Typhus and typhoid fevers; small-pox; benefits of vaccination; measles; scarlatina.

3. Other Diseases:

Observations on their etiology, pathology, and therapeutics.

Peculiarity of type or tendency.

Number of cases, and a comparison of it with that of other years.

4. Miscellaneous:

Medical effects of indigenous plants, and of new remedies.

Facts of interest in surgery and obstetrics.

Notices of members deceased during the year.

List of officers and members.

REPORT OF THE ADAMS COUNTY MEDICAL SOCIETY.

The Adams County Medical Society has enjoyed a greater degree of prosperity during the year past than during the preceding year. The regular meetings have been more regularly attended, and an increased interest in the proceedings has been manifested by the members. It has been proposed to increase the number of meetings from three to six. Three new members, all young practitioners, have been admitted to the Society, and a valued member has been lost through the death of Dr. John E. Gilbert, Recording Secretary of the Society. One student has been reported to the Board of Examiners.

No serious epidemics have prevailed. Several cases of smallpox, one of which proved fatal, occurred in the northern portion of the county. The disease was confined, however, to persons who had visited infected districts. Owing to the variable state of the weather during the latter part of the winter and spring, there has been an unusually large amount of pulmonary disease, especially pneumonia, which has been attended with a high rate of mortality. Pertussis and morbilli in mild form both prevail to some extent at present.

Dr. Charles Horner, Gettysburg, gives a biographical sketch of the life of Dr. John E. Gilbert, and contributes an interesting report of a surgical case given in full farther on.

Dr. J. W. Pearson, York Springs, in a paper on the treatment of leucorrhœa, advocates the use of copaiba. In preference to all other remedies Dr. Pearson uses the oleoresin, or the oil, if the stomach bear this better, in ten-drop doses. In connection with some preparation of iron, copaiba has seldom failed to give relief or effect a perfect cure. In the case of a lady suffering from a profuse muco-purulent discharge from the vagina, following a labor in which embryotomy had been performed, leaving the patient in a debilitated condition, a complete cure was obtained in four weeks, after other treatment

had failed. Thirty drops of the oleoresin of copaiba were administered before each meal, and 30 gtts. dialyzed iron after meals. Diet, nourishing, and rest enjoined.

Dr. R. B. Elderdice, McKnightstown, reports an unusual case of cholera morbus or sporadic cholera, occurring in a robust farmer, aged 42, after exposure to heat and hard labor. The attack lasted four days, the stools varying from twenty to thirty-six in each twenty-four hours. Morphia hypodermically, as advised by Dr. J. C. O'Neal of Gettysburg, in consultation, checked the discharges for a few hours on the third day, after morphia by the mouth had failed. The discharges were finally checked on the evening of the fourth day by an enema of tannin (20 grs.), laudanum (60) and starch. The patient, although very much debilitated, recovered in a short time.

Dr. A. Noel, Bonneauville, reports a case of puerperal peritonitis, or child-bed fever, nineteen hours after the termination of labor, in a primipara, the only peculiarities of which were "a peculiar sharp pulse with some headache" and severe after-pains. The disease was ushered in with violent rigors, followed by fever and soreness in the abdomen, with cessation of the lochia. Pulse 140, quick, sharp, and of considerable volume.

The treatment was active, calomel was administered as a purgative; tincture of aconite having failed to reduce the pulse, venesection was resorted to, with the desired effect; the blood drawn presented "the buffy coat;" twelve hours after, the bleeding was repeated, but the blood did not show the buffy coat. The lochia were fully established after the first venesection. Turpentine stupes and turpentine internally were successfully used to combat tympanitis. In fifteen days from the time she took sick, she was convalescent, and made a good recovery.

Dr. Noel, in submitting a *résumé* of practice during the past year, mentioned fifteen cases of pneumonia, all of which terminated favorably, and eight cases of diphtheria, two of which were fatal. Death occurred in the one case from cardiac paralysis on the ninth day. The child had been progressing favorably after a malignant attack, when suddenly on the seventh day, shortly after the child had been at stool, a change was noticed.

The pulse, which a few moments before had been normal, was found to be making "a double bubbling quick beat about twenty times a minute, with intervals of complete rest." "In

this manner it continued for forty-eight hours, when death suddenly occurred."

The new members admitted to the Society were: Drs. William H. Oyler, McKnightstown; John C. Felty, Hunterstown; and Joseph B. Scott, Gettysburg.

Respectfully submitted by

JOSEPH B. SCOTT,

Recording Secretary.

GETTYSBURG, May 6, 1882,
Adams County, Pa.

Dr. A. NOEL reports as follows:

A Case of Childbed Fever, or Puerperal Peritonitis.

MRS. S., Bonneauville, Pennsylvania, primipara, was confined December 29, 1881. She was seized with labor pains during the previous night, and gave birth to a daughter about eleven o'clock A. M., of the above date. The only unusual feature in her case, during labor, was a peculiar quick and sharp pulse, with some headache and some heat of the skin. In every other respect the labor was as natural as any that I had ever attended. I feared convulsions might ensue, and gave her, through the dilating pains, ℥j of chloral hydrate, in four doses, a quarter of an hour apart, to make the dilating pain as little disturbing as possible. This had the desired effect; all passed off well, with comparatively little suffering. The presentation was occiput anterior. The dilatation of the os was natural and speedy. The temperature of the parts was by no means above the normal, and in splendid condition for a speedy delivery.

After the birth of the child she seemed to do very well, only that peculiar pulse continued about the same as during labor. Soon after the birth she had pretty sharp after-pain, an unusual sequel in primipara, for which I gave chloral with some relief.

In this manner the case continued until on the morning of the 30th, about six o'clock, nineteen hours after the birth, when she was seized with violent rigors, soon followed by fever, soreness in the abdomen, and a cessation of the lochia. I saw her a short time after the chill, the pulse had then already run up from 132 to 140, sharp, quick and of considerable volume. I gave a cathartic of hydrarg. chlor. mit. and directed warm stupes of infusion of mint and chamomile, as hot as could be borne, over

the abdomen, and under the stupes directed a cloth to be laid, saturated with turpentine and lard, equal parts; and at the same time gave tincture of aconite (root) in three-drop doses every three hours. I saw her then at very short intervals through the day. In the afternoon the abdomen began to distend rapidly, and was very tender everywhere to the touch. The pain still continued, like after-pain, at intervals of fifteen to twenty minutes, perceptibly increasing in sharpness and severity, at every recurrence, until they caused the severest distress. These pains deceived me somewhat as to what was going on.

In the evening, about six o'clock, twelve hours after the chill, I had no longer any doubt as to what was before me; the abdomen was still more distended and more painful to the touch, and the inflammation had already crept over the transverse and ascending colon, causing sharp pain at every respiration in this location. The ascending and transverse colon were prominently thrown up to view the size of a man's arm. It is natural to suppose that the descending colon was the first to be attacked after the inflammation invaded the abdomen, yet it was not so prominently thrown up as the transverse and ascending.

The pulse at this time had mounted up to 156+, thirst and heat proportionately. I saw now that if I could not do something to check this fire at once my patient would be beyond hope in a few hours more, and I quickly decided to apply Gordon's method of bleeding. I immediately opened a vein in the right arm, and let the blood flow freely until I saw that she was just going to faint away. I had made up my mind to take twenty-four ounces—I do not think, however, that I had more than eighteen or twenty ounces before I had to stop. I then gave mor. sul. $\frac{1}{4}$ gr. every two hours during the night and continued the stupes. The pulse after bleeding was small and soft, and was soon reduced to about 130. She rested comfortably through the night without any pain except tenderness to the touch over the abdomen.

In the morning of the second day, December 1st, the pulse had again risen to about 140, and had again assumed that quick and sharp character, she having had another chill a few hours before. I then opened a vein in the other arm, and took about sixteen ounces more, which almost brought on syncope again. Soon after this bleeding the pulse was reduced to 120. I then gave opium and ipecac. every two hours. The bowels had

moved through the night, and to-day I gave an injection of turpentine and castor oil to relieve the tympanitic distension of the bowels and abdomen—turpentine ℥s and castor oil ℥j, made into emulsion with white of two eggs. This had, in a few hours, the desired effect; the flatus passed copiously with the motion of the bowels, and was followed by great relief. The distended colon sunk down, and the abdomen was greatly reduced in its tympanitic distension and tenderness, and felt more natural.

On the third day, December 2d, owing to some indiscreet excitement through the day, her case was again aggravated in every respect, which had, no doubt, its influence to prolong it. In the evening of this day the pulse rose again to 132+, fever and heat proportionately. The aconite was sufficient now to reduce the pulse and temperature in a few days more.

Soon after the last venesection I used aconite in three-drop doses given every two hours, continually until the pulse was reduced to less than 100, then at longer intervals—three and four hours as indicated.

For the first eight or nine days after the attack the pulse ranged from 156, 140, 130, 120, 132, 120, 118, 116, 108 to 100 in the order above indicated. After the ninth day it followed the following order: 100, 96, 94 to 80 until she had fully recovered. The temperature moved with the pulse, high when the pulse was frequent, and lower when the pulse was less frequent.

The turpentine and castor oil injection was made once a day for four days in succession, and the bowels were always afterwards moved by injections of the oil alone, if further injection was needed to move them. Several times the bowels were moved by giving oil inwardly.

The warm stupes were continued day and night for nearly a week.

Drew the water twice a day with the catheter, and ordered the bed chamber to be used when the bowels moved, so as to insure perfect rest.

Washed out the vagina twice a day with infusion of chamomile with the syringe.

The lochia were fully established after the first venesection, and continued uninterruptedly afterwards and were natural.

On the eighth day, the tongue commenced coating with a heavy brown coating, still moist. I then gave emulsion of turpentine,

with opium and ipecac. After several days it had cleaned again, and from that time on she convalesced rapidly, and in about fifteen days from the time she took sick, she had made a good recovery.

I might add the marked difference of the blood in the two bleedings. That of the first bleeding showed the buffy coat of the older writers in a more marked degree than I ever saw it; the clot on the surface appeared of a silvery-gray color mixed with the red, and was raised very markedly at the sides. This gray color was visible also through the clot when broken up; the clot was very firm. The blood drawn at the second bleeding, twelve hours after the first, had not the buffy coat, the clot was less firm, and had the appearance of blood in ordinary states of the system.

As the first few days were the most important and interesting in the case, I have given these only in detail; and the subsequent days in a general and brief way, in order to avoid carrying the report to too great length.

The above case, imperfectly as it is reported, was the first well-marked case of the kind that I have met in a practice of nearly twenty years. And the truth of the vivid and graphic description given of it by the late eminent scholar and writer on Obstetrics, Professor Meigs, of Philadelphia, has fully impressed itself upon my mind, never to be removed.

I do sincerely believe that, if it had not been that I had his invaluable work at hand and carefully studied it on this subject, I would not have succeeded in saving the life of my patient. I do not think that there is one disease, in the whole catalogue of diseases, upon which there are half as many erroneous and deceptive theories, as well as methods of treatment, as on this dreadful malady, which numbers its victims annually by thousands.

The physician may look upon it as a fever, a septicæmia, a phlebitis or an erysipelas, it is nevertheless a phlegmasia, brought about by whatever cause, sthenic or asthenic, in proportion as the system is poisoned or depraved at the time of its onset. And as a phlegmatic of a high or low grade, he must meet it, and treat it. He cannot look upon it as a fever, or a septicæmia, and let the inflammation take care of itself, without a fatal result. The inflammation must be met, as recommended by Professor Meigs, energetically and at once; when that is

subdued, all other indications can be met rationally with a hope of success.

The case above reported was altogether of a sthenic character, the system in good condition at the time of the attack, with an exceedingly high grade of inflammation.

I could discover no cause, and believe it to have been atmospheric.

REPORT OF SICK, etc.

	Cases.	Deaths.
Pneumonia,	15	0
Catarrh, pul. and abdominal,	29	0
Diphtheria,	8	2
Fractures, arm, rib, spine of scapula,	3	0
Goitre,	1	0
Ophthalmia,	1	0
Thrush,	2	0
Diarrhœa, various forms,	8	0
Sciatica,	3	0
Dyspepsia,	3	0
Catalepsia,	1	0
Apoplexia,	1	1
Valvular affection of the heart,	1	0
Nervous headache,	5	0
Congestive headache,	2	0
Quinsy,	3	0
Convulsions,	2	0
Measles,	6	0
Milk crust,	1	0
Debility of old age,	1	0
Palsy,	1	0
Dysmenorrhœa,	2	0
Phthisis pulmonalis,	2	1
Labor,	5	0
Abortions,	2	0
	110	4

Of the above cases none were of special interest, except those of one family, three cases of diphtheria, two of which terminated fatally—one in three days and the other in nine days. The throat affection of the first case showed well-marked symptoms of malignancy. The inflammation was of a deep purple color, accompanied by a typhus state of the system. The throat affection yielded in about a week, and the case seemed, to all appearance, to be progressing favorably, when, suddenly, paralysis of the heart took place, and in two days later the child was a corpse. The most remarkable was the action of the heart

after paralysis. I was present when that took place; had examined the pulse a few minutes before; it was regular, only weak, the number of pulsations very nearly normal. The child had occasion to get on the chamber, and after lying down again I noticed a change, when I again examined the pulse and heart, and found that it made a kind of double, hobbling, quick beat, about twenty times a minute, with the intervals perfectly quiet; no motion of the heart whatever. In this manner it continued for forty-eight hours, when, suddenly, death took place.

The oldest was the last attacked. Had quite a severe attack, but did not show so much malignancy. About the seventh day croup was added, which yielded in about a week later. The epiglottis in this case was somewhat injured; so that for many weeks after, when the child would take food or drink, particles would fall into the trachea, causing violent paroxysms of coughing.

Dr. J. W. Pearson reports:

At several of our meetings I have urged members to report minor cases or anything that would prove interesting to others, thereby increasing the interest of members in our meetings, believing that waiting for important or astounding cases, which seldom turn up, was a drawback to our society. The report of any new method of treating the most trivial disease must prove interesting to any practitioner, particularly if it be a disease that is liable at times to baffle the physician. Entertaining this idea, in May last I reported for your consideration a method of treatment of dysmenorrhœa which had proved quite satisfactory to me. And I now propose saying a few words in regard to the treatment of leucorrhœa (or whites), a disease which is met with almost daily by every practitioner, and which sometimes proves quite troublesome.

For some years past, I have abandoned the use of astringent and cooling washes, and have depended almost entirely on the preparation of copaiba, preferring the balsam when the stomach will bear it, but when not well borne substituting the oil, in ten-drop doses. They, in connection with some preparation of iron, have seldom failed to give relief, or cause a perfect cure. As a proof of its efficacy, I would report the following case, which although not an ordinary case of the disease, as generally met with, belonged to the same class.

In March, 1882, Mrs. ——— applied to me for treatment. She had been confined November 9, 1881, had been delivered with great difficulty, being a shoulder presentation, and delivered by dissection, had made a fair recovery, with the exception of debility, and a profuse muco-purulent discharge from vagina which had rather increased than diminished, although under constant medical treatment. I directed balsam copaiba thirty drops before each meal, and thirty drops dyalized iron after meals, and a slight anodyne at bedtime, in connection with rest and a nourishing diet. One month later she reported herself well. The vaginal discharge had entirely ceased, had had a regular menstrual flow, and regained her natural strength.

I do not report this case, or this treatment, as anything worthy of note farther than the fact of the copaiva being nowhere recommended, in any work which I have read, as a remedy in this disease, and also of the good results I have obtained from its use in many cases.

York Springs, April 27, 1882.

Dr. R. B. Elderdice reports:

An unusual case of Cholera-morbus.

September 9, 1881, saw Mr. A. F., farmer, age 42. He was exhausted from overwork and exposure to heat. Was vomiting bilious matter; had pain in bowels, tenderness of liver, and slight constipation. Gave ½ gr. doses calomel, with sugar, dry on tongue, and ordered ℥ss. of castor oil as soon as stomach settled. Next day he reported better, and I did not see him. That evening, I was called to see him, and found him suffering from severe cholera-morbus (sporadic cholera), vomiting and purging, and suffering much pain. Gave morph. sulph. ½ gr., dry on tongue, every half-hour, until relieved. Vomiting ceased promptly, but diarrhœa continued, there being from twenty to thirty-six liquid stools each twenty-four hours. On the 12th the discharges were profuse, greenish colored, and watery, containing an immense amount of floating flocculi, having the exact appearance of the rice-water discharges of malignant cholera. Countenance was shrunken and pinched up; hands shriveled and presenting appearance of washer-woman's hands. The discharges numbered twenty-seven in this twenty-four hours, were large in quantity, and shot from

anus as if squirted from a syringe. The treatment had been —about all I could suggest,—morph. and bismuth, chloroform, trs. opii and capsici, with sp. ammon. arom. for exhaustion, and laudanum and plumb. acet. enemas. Morphia had been given for about forty-eight hours, in ½ gr. doses every half-hour or hour, without checking bowels or producing any degree of narcotism, though pupils contracted somewhat. Pulse was rapid and feeble, temperature reduced, surface cool and dry. On the 13th I sent for Dr. O'Neal of Gettysburg, who kindly saw the case with me in the afternoon. By this time the rice-water discharges had ceased, but numerous large watery evacuations were still occurring. The bowels had moved thirteen times that morning. Dr. O'Neal suggested morphia hypodermically, which was given at 2.30 P. M., with result of no more evacuations that afternoon. At 7 P. M. I saw the patient again, and gave ¼ gr. morph. hypodermically. Bowels remained checked until 11 P. M., when they opened fire again. Morph. hypodermically was repeated at 7 A. M. of 14th, and morph. continued per orem, with whisky and liquid extract of beef every three hours, in alternate doses. From 7 to 11 A. M., twelve discharges, when bowels again checked until 3 P. M.; from which time until 7 P. M. twenty-four discharges, some of which were involuntary, occurred, making thirty-six in the twelve hours.

I had now concluded that diarrhœa *couldn't* kill him, and that opium *wouldn't*, and, as a *dernier ressort*, gave enema of 20 grs. tannin rubbed up in ℥ss starch water, with 60 drops laudanum added. Went home, expecting it to do no good, and that death from exhaustion would soon occur. Had left six tannin powders, 15 to 20 grs. each, with directions for one to be injected, with 40 drops of laudanum, every three hours, unless narcotism occurred. On my return A. M. of 15th I found bowels had not moved since the enema I had given the previous evening, and, consequently, no more had been given, whisky and beef extract alone being administered. This enema I had seen used at Blockley Hospital, Philadelphia, during the cholera in winter of 1866-67, and thought it *might* serve a good purpose in this case. The bowels did not move at all until 18th, A. M., and I let them severely alone, until they acted from effort of nature. Quinine, morphia (in reduced doses), whisky, and extract of beef, every few hours, was the treat-

ment from now until convalescent. Patient had never been ill before, and was reduced to a mere frame, though only abed nine days. His recovery was much promoted or perhaps entirely owing to his exceedingly strong constitution. I considered it a case of sporadic cholera, with a tendency to a malignant form of disease, brought on by excessive and long-continued hard work and exposure to heat. Flint, in his Practice, says (p. 426) that "As soon as the so-called rice-water or choleraic stools, are apparent, the patient is to be considered as attacked with cholera." In this case the rice-water discharges occurred profusely, yet it could not be called one of epidemic cholera, for no epidemic existed at the time or place, though some of the symptoms resembled it to such an extent that, had the disease occurred in a locality where cholera was present, it would undoubtedly have been looked upon as such. Hiccough persisted for two or three days, and no remedy used had any effect in controlling it.

Aitken, in his Practice of Medicine, says the duration of an attack of cholera-morbus *rarely* lasts over a day. In this case it continued over four days.

He also says that in cholera "The largest number of deaths take place between the hours of 7 and 11." In this case the most violent purging and most unfavorable symptoms were *generally* between those hours, except on the 14th, when the most violent purging was between 3 and 7 P. M.

McKnightstown, Pa., September, 1881.

Dr. Horner reports the following case:

On Saturday, the 22d of October, 1881, G. S., a son of W. S., residing in Gettysburg, fell from a hickory tree to the ground, a distance of twenty-five feet. The lad was fourteen years old, and, with another boy of about the same age, had gone in the morning to gather nuts. He was brought home in a buggy, his comrade having notified his parents of the accident, which had occurred a mile from town. I was summoned by the father to see his son immediately after he was brought home. I found, upon examination, the injuries to be serious and apparently fatal in their character. He had concussion of the brain, from which he had partially recovered. This condition of brain was in consequence of a fracture of the external table of the cra-

nium over the left frontal sinus. He had a compound fracture of the ulna, and a simple one of the radius of the left fore-arm, The ulna protruded about an inch through a large wound of the integuments. He likewise suffered with a simple fracture of both bones of the right fore-arm near the carpus, with a compound fracture of the index finger of the same side, the phalanx protruding through the flesh. He had lost considerable blood from the wounds, and when I saw him he was almost collapsed from the shock and bleeding. Assisted by my son, a medical student, we stripped him of his soiled clothing, and placed him on a comfortable spring-bed, which had been prepared for our little patient. We first reduced by gentle traction the fracture of the bones of the left fore-arm, and applied two splints, one of wood and the other of thick pasteboard, with a hole corresponding with the wound over the ulna. The splints were well padded with cotton and loosely bandaged. We next adjusted the broken bones of the right fore-arm and index finger of the same side, and likewise applied two splints, well padded and loosely bandaged. Both arms were now placed upon soft pillows, in the position of an obtuse angle at the elbow joints, so as to promote the circulation of the injured parts. I ordered every one to be excluded from the room except the family and nurses. Prescribed potass. bromid. grs. xv to procure rest and sleep, the dose to be repeated if necessary.

23d. Found our patient doing very well, with very little inflammation and swelling of the parts injured; continued the potass. bromid. at bedtime.

24th. Condition still favorable, bones in proper position, and very little suppuration—having examined fractures.

25th. Considerable fever, pulse 116, delirium, patient restless. Ordered calomel grs. iv, to be followed in four hours with potass. et sod. tartras ℥iv, and ice applied to head.

26th. Fever continues, pulse 112, slight delirium, suppuration commencing in wounds, with considerable swelling, and inflammation, of an erysipelatous character, of left arm. Placed this limb in a single concave splint well padded, and no bandage applied; cathartic operated; continued potass. bromid. at bedtime.

27th. Patient better, fever subsiding, pulse 100, wounds assuming a more healthy appearance, the left fore-arm, however, still very much swelled, with a tense and shining look.

28th. Condition about the same; dressed the fractures and commenced drawing gradually together the edges of wounds of left fore-arm with adhesive plaster. Ordered quin. sulph. gr. ½ three times a day, with potass. bromid. at bedtime. Diet, light, nourishing articles of food.

29th. Patient better, fever subsided, suppuration of wounds slight, and very little swelling now of the left arm; bones uniting, and the wounds diminishing rapidly in size.

After the tenth day improvement was rapid, appetite good, and his spirits much more cheerful. In less than three weeks the wounds had closed and the fractured bones united, without any necrosis or exfoliation. In four weeks I released both arms from the splints. There was complete use of the limbs and no deformity, except of index finger, and this was owing to my inability to use the necessary force and pressure to keep the phalanx from slightly overlapping the other.

My principal object in reporting this case at considerable length is to show the importance, where so much injury is done to the nerves and blood-vessels of any part of the body, but especially the extremities, by violence, and where gangrene and mortification are to be dreaded, of avoiding not only much force in adjusting the parts broken, but likewise any pressure and stricture that might be produced by the splints and bandages employed in the treatment.

The only local application made to the wounds was a cloth kept wet with spts. frumenti.

JOHN EDWIN GILBERT, A.M., M.D. 1852–1882.

By CHARLES HORNER, M.D.

Dr. John E. Gilbert, the subject of this brief biographical sketch, was born in Gettysburg, Adams County, Pa., the twenty-fourth day of June, 1852. He was educated at Pennsylvania College, graduating in the class of 1872. After leaving college he devoted his time, for several years, to teaching. He taught the public school of Hunterstown, Adams County, for one term, including a period of six months. He was then elected principal of the public school of Hockendoqua, Lehigh County, in which place he remained for two terms, embracing the fall and winter months of 1874–75.

He commenced reading medicine immediately after graduating at college, in the year 1872, in the office of Dr. H. S. Huber, of Gettysburg. His medical studies were confined

exclusively to the summer months, when he was not engaged in teaching. Dr. Huber having died in the fall of 1873, John E. Gilbert continued his studies under the preceptorship of Dr. Charles Horner, of Gettysburg. He entered the medical department of the University of Pennsylvania in the fall of 1875, and after attending two full winter courses of lectures, he graduated with honor in the spring of 1877. At a competitive examination for the position of resident physician at Blockley Hospital, Philadelphia, he received the appointment for one year, commencing on the first day of May, 1878. Although elected to serve the above period of time, by the board of managers of the institution, he was compelled to resign at the expiration of seven months, on account of impaired health. Dr. Gilbert now left Philadelphia and returned to Gettysburg, his home, in order not only to recuperate his shattered health, but to practice his profession, which he so much loved. He opened an office the first day of March, 1879. On the tenth day of June, 1880, he was married to a most estimable lady, Miss Anna M. McKinstry, of McKinstry's Mills, Carroll County, Maryland.

Dr. Gilbert, by the zeal and fidelity he displayed in his professional work, had made in a short time many friends, and established for himself a large and successful practice. This work he prosecuted with untiring industry until the ninth day of February, 1882, when the pulmonary disease from which he had suffered for some time, compelled him to abandon the practice altogether; and after an illness of nearly three months with phthisis, he calmly and peacefully expired the twentieth day of April, 1882.

Dr. Gilbert was a young man of pleasing manners, of culture, for his intellectual and medical training were thorough, and as a physician was very much respected and loved in the community in which he lived and worked. Had he not been cut down in early manhood by that fell destroyer, consumption, he would have taken an honored place in the ranks of our profession.

REPORT OF THE ARMSTRONG COUNTY MEDICAL SOCIETY.

The sources of meteorological data in this county are very meagre. The table of rainfall appended was obtained from the River Observer, United States Signal Service, at Freeport. An effort was made to compile mortuary tables from reports of physicians, and circulars were sent to every one in the county; but the result was too inconsiderable to make an estimate anything like complete. From the few replies, and from observations and reports at meetings of the Society, we gather that it has been an unhealthy year. Scarlatina, diphtheria, enteric fever, and small-pox have all contributed to this end. Scarlatina and diphtheria have been pretty evenly distributed.

Dr. Ralston reports "that diphtheria started east of the Allegheny River, and spread westward, beginning in a very mild form, and getting more and more severe until the most malignant type was established in epidemic form. Nothing unusual was noted concerning it. The sequelæ were variable and frequent. The treatment consisted of a brisk cathartic, or, if there had been no vomiting, an emetic, followed by warm sponging, diaphoretics, and arterial sedatives for the throat; counter-irritation externally; astringents and antiseptics internally. After the violence of the attack had exhausted itself, quinia, iron, alcoholics, and food were given to sustain the vital powers."

The first case of small-pox occurred four miles above Kittanning. It was confluent, violent, and speedily fatal. A near neighbor was the next. The first case proving fatal in this family, seven others of the same family were attacked, but made good recoveries, vaccination having been performed a while before the onset of the fever. Two cases of varioloid in Kittanning and five along the railroad below Kittanning were reported; the evidence in all the cases pointed to Pittsburgh as the source of infection.

Prompt measures were taken by the school boards of the principal towns to enforce vaccination on all pupils in attendance. Considerable difficulty was experienced in obtaining good virus at first, but after good material became plenty, the vaccinations were remarkably severe, and the re-vaccinations after short intervals that were successful were very numerous. Intense febrile movement, erythema, "vaccinala," were common occurrences. Two deaths, indirectly the result of vaccination, are given below. Persons in the country, and even physicians, do not seem to have been careful enough about clearing the scabs (in arm to arm) of all pus. Several cases of deep ulceration from this purulent inoculation have occurred, and these cases of puerperal septicæmia, reported by Dr. J. T. Deemer, can almost certainly be attributed to this source.

Enteric fever was endemic in the upper middle part of the county, and has been attributed to drought, the springs having dried up or "tasted bad" in many of the places. The general average of rainfall was not unusually small. In July, August and September altogether there was not as much rain as in June, while in August there was less than one inch. In Kittanning, where the water supply is abundant and pure, there was not a single case having its origin there.

Among the number of other interesting cases reported to the Society the following are especially worthy of note:

First.—Autopsy of an obscure case of gall-stone perforating the peritoneum. No jaundice or special pain up to a short time before the accident. Reported by Dr. Cunningham.

Second.—Craniotomy in contracted pelvis sixth time, ending in death from septicæmia. Reported by Drs. Allison and Alter.

Third.—Strangulated hernia; remarkably small tumors, operation, recovery. Reported by Dr. Maxwell.

Fourth.—Tumor of the neck; operation, abortion, death from septicæmia. Reported by Dr. T. H. Allison.

Fifth.—Craniotomy, contracted pelvis, prolapsed cord, laceration of perineum by shoulders; patient very fat, recovery. Reported by Dr. Alter.

The deaths in the professsion during the year were: David Alter, M.D., Freeport, Pa.; A. J. Calhoun, M.D., Goheenville, Pa.

RAINFALL AT FREEPORT, 1881.

	INCHES.		INCHES.
January,	3.89	July,	1.76
February,	3.70	August,	.92
March,	4.15	September,	1.70
April,	2 24	October,	5.35
May,	3.59	November,	4.85
June,	5.51	December,	5.02
Total,			42.68

M. H. ALTER,
J. G. CUNNINGHAM,
R. G. RALSTON,
} Committee on Report.

Reported by Dr. J. T. Deemer.—Two families were vaccinated from humanized virus. Well-marked erysipelas followed in every case, but varied in intensity; one case, patient age 22, being fatal—no medical attendant. In the family in which no death had yet occurred the mother was pregnant. Eight months after the children were well she went into labor, and was confined on the bed that had been occupied by one of the severe erysipelas cases, and was attended by the mother of the patient who had died. I was called next morning and found marked rigor, uterus flabby, lochia suppressed, after-pains severe. Temperature 99, pulse small, rapid; dyspnœa. Death ensued on third day.

Another woman attended by the same midwife died on tenth day after delivery in active delirium.

DAVID ALTER, M.D. 1807–1881.*

By DR. J. K. MAXWELL.

This remarkable man was born in Westmoreland County, Pennsylvania, on the third day of December, 1807, and died in the adjacent village of Freeport, Pa., where he had spent most of his life, on the eighteenth day of September, 1881. In the truest sense of the term, he was a self-made man. A child of poverty, his early years were spent among the toils and hardships and privations of frontier life, where he enjoyed but limited facilities for laying the foundations of his subsequently eminent career. Of German extraction, however, he inherited a mind fully endued with that tendency to earnest, patient, and persistent investigation which has always been so characteristic of his race. And thus we find him, at the early age of eight

* In preparing the above paper very free use has been made of the biographical sketch of Dr. Alter lately published by Dr. Frank Cowan, of Greensburg, Pa.

years, alone among the repressing tendencies of the back woods of Western Pennsylvania, commencing a series of experiments on electricity, such as charging Leyden jars by means of a wire attached to a pole which he had erected for the purpose, and otherwise carrying out ideas which he had acquired by reading a stray volume of the Life of Franklin.

Gifted by nature with a fine mechanical genius, he continued his investigations from childhood to old age, with instruments constructed by his own hands, and which he rarely had the ability to purchase. Having obtained the loan of some works on electricity and chemistry from neighboring physicians, the young backwoodsman pursued his studies with such avidity, perhaps by firelight after his day's labor was finished, as to do serious and lasting injury to his sense of sight. Having undertaken the study of medicine, he graduated in 1831 at the age of twenty-four. He seems to have first located as a physician at Elderton, Armstrong County, Pa., from whence he soon after removed to Freeport in the same county, where he remained to the time of his death.

As a physician in a country village, his life, as is too often the case, was one of incessant and ill-requited drudgery and toil. By his neighbors he was revered and respected; but, as a practitioner, his long life was worn out in arduous attendance upon the frequently distant bedsides of those who were unable, or perhaps unwilling, to furnish him in return even the means of keeping a horse, or otherwise defraying his necessary expenses in attending them. Such, indeed, is the ordinary experience of country physicians; and to others situated as he was, it seems marvelous that a man constantly engaged in duties so arduous, and forced to maintain a constant struggle with his inauspicious surroundings for the very means of existence for himself and his family, could even retain in his mind whatever of the first principles of science he might have acquired in his earlier and less busy years. But the marvel increases when we consider that, from boyhood to old age, he never ceased to carry on, with instruments of his own construction, a series of profound, original, and successful investigations on nearly every branch of natural science. With a mind well stored with facts and principles, he always kept himself fully abreast of discoveries of the age. And thus, with an intellect constantly pressing in all directions upon the boundaries of the unknown, he succeeded, as few men have ever done, in projecting the fierce light of his investigations, at least in one direction, far beyond its gloomy confines, and adding by his discovery of spectrum analysis, in the language of one of his biographers, "a new sense to mankind."

In his intercourse with others his deportment was always strongly marked with that unassuming modesty of demeanor which is so frequently the prominent characteristic of the man of

great acquirements, but unfortunately so seldom the leading characteristic of the modern successful practitioner; and thus it happened that his great worth as a physician was only fully known to his professional associates. As the President and Nestor of our Society he was loved and venerated by all its members; and in all discussions of unsettled or questionable points of practice or of science we had long since learned to trust his opinion as the utterance of an oracle.

In 1836 he invented and put into successful operation a magnetic telegraph at Elderton, Armstrong County, Pa. It is certain, as is usual in such cases, that others were at the same time making similar experiments, and it is even possible, though not probable, that one or two others may have achieved similar success a year or two earlier. Yet it cannot be questioned that, dissociated as he then was from other investigators, to him alone belongs the credit of his invention. As a machine, however, he never regarded it as a rival, or even a progenitor, of the telegraph of Morse.

In 1835 or 1837 he invented and constructed an electro-motor engine, which in a local paper, the *Kittanning Gazette*, of June 29, 1837, he described at length in an article headed "Facts relating to Electro-Magnetism." This remarkable paper attracted wide attention. (See "Silliman's Principles of Physics," p. 616.)

The world may regard his electro-motor and his telegraph as mere toys, or at best as vague predictions of their future possibilities. But, constructed at such a time and under such circumstances, they mark their inventor as one of those men

> "Who hail afar the tops of towering thoughts
> That men of common stature never saw."

As a practical chemist Dr. Alter's abilities are sufficiently attested by patents obtained by him, with others, for improved and once highly valuable processes for the manufacture of bromine and coal oil.

His revolving retort for the manufacture of the latter substance would quickly have placed him in affluent circumstances, but for the, for him, unfortunate discovery of petroleum in Western Pennsylvania, which so reduced the price of oil as to make his invention practically worthless.

One other reference to the scientific achievements of Dr. Alter will suffice to fill the limits prescribed for this article.

Frauenhofer had observed that the solar spectrum is crossed by numerous fixed lines, and that the spectrum of the fixed stars differs from that of the sun in the number and arrangement of these lines. It is not distinctly known when Dr. Alter first conceived the idea that these differences were due to the chemical constitution of the bodies in question. But it is certain that in examining the ruins, shortly after the great fire in

Pittsburgh in 1845, he found a fragment of very clear glass, which he ground into a prism with a large refracting angle of 74°, and with it pursued his experiments on spectrum analysis. This prism was presented by Dr. Alter, shortly before his death, to his friend and biographer, Dr. Frank Cowan, of Greensburg, Pa., and is still in his possession.

His first paper on the subject was published in Silliman's Journal, Second Series, Vol. XVIII., Nov., 1854, pp. 55–57, Art. VI.: "On certain physical properties of light produced by the combustion of different metals in the electric spark. By David Alter, M. D., of Freeport, Pa." A second paper appeared in the same journal, Vol. XIX., May, 1855, pp. 213, 214, Art. XXI.: "On certain physical properties of the light of the electric spark within certain gases, as seen through a prism. By David Alter, M. D., of Freeport, Pa." Want of space alone prevents us from inserting these articles. It is only necessary, however, for the most skeptical to refer to them to convince himself that they contain all that has since been credited to more recent investigators. They were translated into several European languages, and published in whole or in part by most of the leading scientific journals of Europe. See "*Chemico Jarsberechte*" of Leibig and Kopp, for 1854. "*L'Institute*," of Paris, for 1856, p. 156. "Archives of Physical and Natural Science," Vol. XXIX., p. 151. "Kopp and Wills Annual Report of Chemistry," 1859, p. 107.

It perhaps does not become us as a society of humble provincial physicians, standing beside the new-made grave of the unassuming man who was so lately our president and our friend, to find fault with the great world without for placing upon the brow of another the laurel wreath we have shown to have been so fairly won by him. To his great quiet spirit it mattered very little in life who wore the honors of the world, and to the calm sleeper in the village cemetery it now matters even less. Yet in justice to his memory we are forced to point out the fact that the article of Professor Kirchhoff, upon which the world has based his claim of being the discoverer of spectrum analysis, was first published in "Kopp and Wills Annual Report of Chemistry for 1859" on page 643, while the same journal on a previous page—107—contains a partial translation of Dr. Alter's article published in Silliman's Journal five years before, completedly covering all the ground claimed by his European rival.

A. J. CALHOUN, M. D.

Dr. A. J. Calhoun, of Goheenville, Armstrong County, Pa., having been taken from amongst us, the Armstrong County Medical Society, of which he was a member, deem it fitting to make some mention of his worth and merit in their

annual report to the State Medical Society. Dr. Calhoun was just in the prime of life, being but thirty-two years old, born and raised in Armstrong County, the people of which, and especially the medical profession, have just reason to feel proud of one so gifted. His ambition was such that, having already attended three courses of medical lectures, he was again in attendance on a fourth course when stricken down with typhoid fever, from which he died on the 29th of September, 1881.

The doctor was a graduate of Jefferson Medical College in 1875, and at the time of his death was in enjoyment of large practice,—his patrons anxiously awaiting his return from each course of lectures, feeling confident that he was still better prepared to treat disease successfully. As a surgeon he was full of courage, acting promptly in emergencies, and as a physician he yielded up his life in his devotion to the cause of medicine.

T. M. ALLISON,
Member of Memorial Committee.

REPORT OF THE BRADFORD COUNTY MEDICAL SOCIETY.

In making the report for this Society, the committee labor under some embarrassment. Although the Society is composed of a goodly number of excellent practitioners in active performance of their professional duties, we find it difficult to get detailed reports from individual members, upon which the general report must be based.

It is true that there have not been any widespread or severe epidemics; yet diphtheria, scarlet fever and pneumonia have been more or less common, and have been met, in the majority of instances, successfully. There have, however, been no new or special forms of these diseases presented, and we are not able to report any new or specific methods of treatment. In reference to diphtheria, we are of opinion that greater care and more extensive preventive measures have been adopted by the people to guard against it, which may be one reason why it has not been as frequent and fatal as in some former periods. The treatment has been varied; differing according to the peculiarities of the practitioner. It may be said that the calomel treatment, especially in the laryngeal forms, has been generally successful. It is a difficult matter, as yet, to get the people to realize that in this disease and scarlet fever much depends upon isolation, cleanliness and disinfectants, if they would prevent extension, and it is difficult to make the watching and anxious parent believe that the good of the neighborhood requires that the patient should be deprived of the assistance of sympathizing friends. Country people have not usually the advantage of trained nurses, and in the majority of instances could not, for want of means, avail themselves of them if they were to be had. This makes mutual assistance almost obligatory, and the spread of disease more easy. But while mutual assistance may be a necessity, there is a custom which is not,—public funerals for contagious cases. It is the opinion of the committee that the

State Society should take some positive and decided stand on this subject, that its influence may be felt in trying to educate the people to a point where they will recognize the evils which grow out of this practice. Especially is that practice reprehensible when it brings large numbers of children—all the playmates—to the burial and funeral services.

A few cases of variola and varioloid have appeared in the county during the past winter; but at each outbreak the case or cases received such prompt attention as to be entirely hemmed in. There was also very general and thorough vaccination and re-vaccination among all classes of people. Bovine matter was very generally used, which, in many instances, was followed by extensive erythema.

In our climate and locality there is always a greater or less number of consumptives. What the ratio of this disease to the number of inhabitants is, or the ratio of deaths within a given period, we are not able to say.

Typhoid and bilious fevers have not been common. Typho-malarial is apt to be more frequent; for while we cannot say that either bilious or intermittent fever often appears, yet there seems to be an underlying influence, believed to be due to malaria, which makes itself felt in many forms of disease, though not of sufficient intensity to produce true typical cases.

Dr. Horton reports diphtheria, scarlet fever, and chicken-pox in his neighborhood; also a case of knee presentation, easily delivered, but the child born dead and having a cleft spine.

Dr. Ladd reports cases of scarlet fever attended with hæmaturia as a sequel. One case especially, a child four years old, passing for a period of seventeen days sufficient quantities of blood to color the urine a bright red, and tube casts also being present in large numbers. The child recovered perfectly under a treatment of tonics, milk, etc. Dr. Ladd also reports a case of aneurism of the abdominal aorta, resulting in death by pressure on the stomach, causing persistent retching and vomiting even when the stomach was empty. The patient died from inanition. Dr. Ladd further reports a case of chronic diarrhœa, which resisted all treatment given by the mouth, but yielded to the use of argent. nit. and tr. opii deod., by rectum, and a diet of milk and farina.

Dr. Allen makes quite an interesting report, but sent it in too late to be fully noticed. He has had sporadic cases of diph-

theria and scarlatina, and is not aware that deaths from these diseases have been more frequent than usual, or that methods of treatment have been improved. He has not been "thoroughly convinced that diphtheria is caused by a germ or parasite," though believing "the throat affords a favorable soil for their development when diseased." During the past two years intermittent fever has prevailed quite extensively along the river and on the plains, at Sayre, Milltown, Factoryville, and even on the hills to some extent. It is said to have been quite common during the early settlement of the country, but not common during the last fifty years. The cause is doubtful, unless found to be the result of stagnant water in the old canal-bed and the drainage into it from a large tannery. Certain it is that those living nearest the canal are the most frequent sufferers.

During last fall he saw several mild cases of typhoid fever. Is in favor of little medication, and prefers milk, milk porridge, and buttermilk to beef tea for nutriment.

Since January, pneumonia has been quite prevalent in his practice, and quinine and whisky have been relied on with other supporting treatment. The Doctor says: "I firmly believe that blood-letting early resorted to in the robust is the most valuable therapeutic agent we possess in curing this formidable complaint." He also adds: "The writer believes that blood-letting must, as a matter of necessity, be revived in acute inflammation and sudden congestions at no distant day."

He also reports several cases of small-pox, discusses the question of vaccination, and favors the use of humanized virus.

He also reports the removal, during the year, of four scirrhous tumors, two encephaloid, and five epithelial. The scirrhous were of the breast, the encephaloid of the testes, and the epithelial of the lip, face, and eye. He says: "Of the last six breasts removed for scirrhus all the cases are living, and but two show any signs of return. Of these, one was operated on more than a year and a half since, and the other nearly two years." I strongly indorse Dr. S. W. Gross' views, lately published, relative to the propriety of early removal of cancerous tumors.

The Bradford County Medical Society has existed through many years, with varying vigor and interest, never dying, yet sometimes almost dead; sometimes displaying marked vigor of life, and again appearing almost moribund. During the past two years it has been unusually active; not only having its annual meetings in September and its semi-annual in May, but

also holding special meetings on the first Wednesday of each month. One of the most cheering signs is the action of young physicians and recent graduates seeking admission to it, and the lopping off of dead and useless members. At the annual meeting in September, 1880, it had thirty-two members. Since then there have been admitted seven members and seven suspended for non-payment of dues, leaving a present membership of thirty-two, which is a very fair showing when the number of regular practitioners of the county is compared with the irregulars. Bradford County contains about sixty thousand inhabitants, and it has about a hundred and twenty practitioners of medicine of all classes and schools. Nearly all of these have registered under the late law.

The Prothonotary's docket shows as follows: University of Pennsylvania, 6; Jefferson Medical College, Pennsylvania, 16; University of the City of New York, 2; Bellevue Hospital Medical College, New York, 3; Geneva Medical College, New York, 10; University of Buffalo, 6; Pennsylvania Medical College, 1; University of Michigan, 1; Berkshire Medical College, Massachusetts, 2; University of Vermont, 2; Ohio Medical College, Cincinnati, 1; Wooster University of Ohio, 1; Pulte Medical College, Cincinnati, 1; Miami Medical College, Ohio, 1; Cincinnati College of Medicine and Surgery, 1; Albany Medical College, 3; Fairfield Medical College, New York, 1; Homœopathic Medical College, Pennsylvania, 4; Hahnemann Medical College, Chicago, 5; American University of Philadelphia, 2; Eclectic Medical College of Pennsylvania, 3; Philadelphia University of Medicine and Surgery, 1; United States Medical College of New York City, 1; Eclectic Medical College, New York, 1; Eclectic Medical Institute, Cincinnati, Ohio, 1; having no degree, but registered under ten-year clause, 36. From this it will be seen that we have seventy-seven practitioners, representing twenty-five different schools, beside thirty-six who have never pretended to be graduates of any.

A committee of examination was appointed last year, under the resolution of the State Society, and it has given certificates of proficiency to four students in medicine.

E. D. PAYNE,
EDWARD MILLS,
O. H. ROCKWELL.

Towanda, Pa., May 6, 1882.

REPORT OF THE CHESTER COUNTY MEDICAL SOCIETY.

During the past year our bi-monthly stated meetings have been regularly held. At these, papers on the following subjects were laid before the Society, and discussed:

Acute Anterior Poliomyelitis, reporting two cases, by Dr. Charles M. Ellis, of Elkton, Maryland.

Medical Education, by Dr. J. T. Rothrock, of West Chester.

Can Potts' Disease of the Spine be Cured without Deformity? by Dr. Oscar H. Allis, of Philadelphia.

The Act of Swallowing, and its Relations to Diseases of the Throat and Nose, by Dr. Harrison Allen, of Philadelphia.

Progressive Pernicious Anemia, reporting three cases, by Dr. Isaac Massey, of West Chester.

Causes of Disorders of the Nervous System, by Dr. George R. Spratt, of Coatesville.

Diphtheria, by Dr. Horatio C. Wood, of Philadelphia.

Among the numerous reports of cases and discussions occurring during the year, one of the most important of the latter was upon simple fractures of the shaft of the femur. This subject was brought before the Society by communications addressed to it by Dr. Ezra Michener, of Toughkenamon. Dr. Michener's views, as gathered from his communications, may be briefly stated thus:

First.—That such fractures are generally so slightly oblique, and so strongly dentated, that, if perfectly co-aptated, the tension of the muscles will keep the fragments in place, provided that rotation about the axis of the limb, or the point of fracture, be prevented.

Second.—That with a proper amount of skill, care, and patience, such perfect co-aptation can almost always be attained; and that when this is attained, extension and counter-extension, other than that secured by the replaced fragments, is unnecessary and injurious.

Third.—Applying these views to practice, he finds the most effective treatment of such a fracture is, after thorough co-aptation of the fragments, to place the limb on a posterior angular splint, somewhat like McIntyre's, with a thigh-piece coming well up toward the tuberosity of the ischium, and short side splints.

In support of these views, Dr. MICHENER brought the experience and results of sixty years of practice, most of the time in accordance with them; and during this period he had "never turned out a limping patient." He also exhibited to a committee of the Society 112 specimens of experimental fractures, produced in dry bones, mostly of the smaller domestic animals. These were designed to show how transversely bones break. In 88 per cent. of them the direction of the fracture made an angle of from 45° to 90° with the axis of the bone. Dr. MICHENER's well-founded reputation for skill and care in scientific investigation entitle his views to thoughtful consideration. The general conclusion of the Society was, however, that while his experience enforces the value of the greatest care, patience, and gentleness in trying to restore the displaced fragments to their normal position, there is not now sufficient evidence to warrant the conclusion that in the living body this can always be accomplished; and therefore it would be unwise and unsafe to discard entirely dressings capable of maintaining extension and counter-extension.

THOMAS SCOTT MORRISON, M. D.

By GEORGE R. SPRATT, A. M., M. D.

Dr. THOMAS SCOTT MORRISON, the subject of this sketch, was the son of a Presbyterian minister. His early education was designed to prepare him for the ministry; accordingly he was sent to Princeton College. Shortly after admission his eyes, always weak, gave him so much trouble as to compel him to return. He took up the study of medicine, entering the office of Dr. Jesse Coates, and, in 1860, graduated at the University of Pennsylvania. His first practice was at Doe Run, this county, remaining there until January, 1863, when, in answer to the nation's call, we find him enrolled as assistant surgeon Sixth Pennsylvania Cavalry. His stay was brief. In the spring he resigned, and located in Downingtown, and gathered a good practice.

A father's failing health called him home, and he located at his early home. Here, at Coatesville, he spent the balance of his life. In 1879 he married Miss Emma Thomas, and one daughter blessed their union. At the age of forty-one, in November, 1881, he ended his missions of mercy.

He had a name in our Society, but never took any part in our transactions. But to those who became acquainted with him he was agreeable, gentlemanly, and succeeded in gaining many friends. In a quiet, persevering way, he went about his work, and served with fidelity those who employed him. He held the confidence and esteem of his fellows, and, as an evidence of their high appreciation of him, he was, by a large vote, elected a director of common schools last spring. His death leaves a vacancy in the affections and hearts of his patrons and friends which it must take many years to fill.

EDWARD JACKSON,
Recording Secretary.

REPORT OF THE CUMBERLAND COUNTY MEDICAL SOCIETY.

In making our report for the State Medical Society of Pennsylvania for the year 1881–82, I am obliged to express my regret in not having heard from members residing in different sections of our county, giving accounts of their labors, and furnishing me with items of special interest with which it may have been their fortune to deal.

I am pleased, however, to say that in general the past year has been free from any alarming epidemics or fatal diseases.

As one who is considerably thrown in contact with diseases of the eye, it might not be inappropriate for me to make allusion to those affections and maladies which are most common to that organ in our portion of the State. The chief troubles met with are errors of refraction. Notwithstanding all that has been said and written on this subject, it is truly astonishing to those who have to deal with the numerous cases which present themselves, that so many persons of all classes and conditions, from infants to those of mature years, are thus affected. The subject is certainly a very interesting one practically, and affords much good food for thought and research.

Pterygii are, I think, next most frequently met with, and due, in many cases, to abnormal refraction. Next follow iritis, nerve and retinal affections, cataract and others of less occurrence in their turn.

Inasmuch as it has become such a settled fact in eye surgery to remove a diseased eye to abort or cure sympathetic irritation, I will mention a case of interest which came to my notice about ten months ago.

The subject was a young man about twenty-four years of age, who had lost his one eye twenty-two years previously by a punctured wound of the ball, inflicted with a pair of scissors. As a result of the injury, panophthalmitis, followed by partial atrophy of the ball, ensued. From this time until about two months before the removal of the affected eye, all went very well, at which time sympathetic irritation developed, in conse-

quence of which the patient submitted to the operation for enucleation, after which, at the proper time, an artificial eye was inserted. The remaining eye rapidly grew stronger, and no symptoms of uneasiness or irritation have since manifested themselves.

In the case of the little girl a partial report of which appeared in the *Transactions* for 1880, I may add, in conclusion of the history of those notes, that vision returned to such an extent that the patient can now read 20-30 "Snellen," verifying the presumption of the cause as given in the original report. The squint is a little more noticeable, but on the whole a very satisfactory recovery was gained. The chorea has likewise been totally absent since the time of first writing.

Small-pox threatened to invade our county during the past winter, with its terrors and evil consequences, but we can now cheerfully and thankfully say that it promises to pass us by without inflicting much distress upon us. A few cases made their appearance in the southern portions of the county, especially in Mt. Holly, whose origin was attributed to contamination with infected rags at the paper-mills; for the disease, according to my informant, first manifested itself in the family of one of the mill-hands. The borough authorities immediately organized a board of health, whose prompt and efficient labors did much to bring the disease to an abrupt termination.

The Carlisle Board of Health, officered by Dr. S. P. Zeigler, president, and Dr. W. F. Reily, secretary, recommended the authorities of our town to furnish gratuitous vaccination to all those persons who were unable to pay for the work. At the same time a general request was made upon the citizens to have their families properly vaccinated. The recommendation to council was at once favorably acted upon, and as a consequence, in a very brief period from the sounding of the first alarm of the disease, vaccination was pretty generally and well done.

We have a very efficient Board of Health, and therefore our town, in a sanitary point of view, is in a pretty fair condition. In fact, it will bear the name of the garden spot of health in the Cumberland Valley.

As to our County Society and its workings, it is our pleasure to say that, during the year, we have increased the number of meetings from three to four, now meeting regularly on the first Tuesdays of January, April, July and October. This was a

step certainly to be desired, as there is nothing which will so thoroughly provoke mutual interest in and promote the welfare of any organization, as well as advance the cause of its object, as repeated personal intercourse between its members, and this can only be effected by frequent meetings. Indeed, I wish we could meet together six times a year, instead of four!

Notwithstanding what has been said, I am still constrained to allude to the rather inert state into which our Society has fallen; a situation more to be deplored than referred to, and yet I feel that I express the sentiments of some of our best members when I make the statement.

There are a few papers read and cases reported during the year, but in no wise does there seem to be any real enthusiasm displayed. We might call it indifference, a want of activity, or disposition to go out of the narrow-minded channel into which one is liable to drop, who is not ever on the alert and willing to work mentally as well as physically. Again, as to the real cause of this sluggish tendency, whether from a want of obedience to the grand commandment, "Love thy neighbor as thyself," which, in the profession as well as out of it, necessarily makes all men less generous with each other and more selfish in the attainment of their own personal glory instead of the mutual advancement of their fellows and the cause of the noble profession which they represent, or whether there are so many varied elements which go to make up the profession in this county, I am unable to say. I do think, and I believe there are many who will agree with me, that the whole secret lies in the lack of interest we take in the cause of medicine socially and scientifically; for if we were to meet with each other oftener in pleasant social and professional intercourse, we would soon lose ourselves in each other, and then, when we parted, we would be less liable to act as though we were strangers with each other.

The inference from my allusion is clear, and until the evil is overcome I doubt if the Cumberland County Society will take a very prominent stand before many of her sister societies. I cannot refrain, though, from thinking that many of us are beginning to realize our condition as a society, and from recent steps taken, and others in view, the grand consummation so much to be desired may not be as far off as we are sometimes inclined to fear.

Before closing our report, mention must be made of the progress which has been attained in the matter of registration. At our last meeting a "Committee on Registration" was appointed, with the president of the Society as chairman, "whose duty it shall be to supervise registration, return all parties who fail to comply with the law, as well as to prosecute such as shall illegally or falsely register." Up to this time all the practitioners in the county except three or four have in part or wholly complied with the requirements of the law.

A notice has been served on those delinquent, and after the expiration of the allotted time allowed therein, legal action will be taken by the committee having the matter in charge.

There are a few who have registered illegally or falsely, who will also be promptly and properly dealt with. I for one must highly commend those gentlemen who so fervently worked for the passage of this bill,—the Committee on Medical Legislation of the State Society, whose chairman is Dr. R. L. Sibbet of our county. Although the bill falls short in some points, it is admirable in many others; and none of us will enjoy the fruits of its effects so freely as those whose fortune it may be to practice medicine fifteen or twenty years hence in this Commonwealth, at which time no such thing as a "quack doctor" will be known.

Again, from the date of the passage of this act no man can be allowed to commence the practice of medicine in this State who has not come up to the requirements of the faculties of respectable, chartered medical colleges. This obligation will forever prevent what has heretofore flourished as a self-constituted or graduated doctor.

All these benefits which may accrue from this medical bill may also have much to do with making prosperous medical associations; for if all are of one mind professionally it will not be difficult to cultivate mutual advancement.

For though it is said, and truly too, that

> "Where the tints of the earth and the hues of the sky,
> In color though varied, in beauty may vie,"

I can assure you that while we have men of all "systems" and shades of practice, to say nothing of the varied codes, if such they may be called (?) which they may see fit to adopt or follow, harmony cannot be expected within their ranks.

Respectfully submitted by

G. WINFIELD ZEIGLER.

Dr. THOMAS STEWART, JR., reports:

A case of Cerebral Meningitis.

Patient, a Sioux Indian boy at the Indian Training School, Carlisle, Pa. Alvan, age fifteen years, came into the hospital, March 15, 1882, complained of headache, pulse 80°, temperature 102½°, respiration 24, tongue covered with a light white fur; gave him calomel 10 grs. followed in two hours by castor oil.

16th. Still complained of headache.

17th. Symptoms about the same, inclined to drowsiness, but would answer questions in a short manner; vomited several times during the day, bile mixed with mucus; gave bromide potassium, 15 grs. every two hours.

21st. No improvement noticeable, evacuates bowels and bladder in bed, can be roused up, but lapses into the same stupor again, pulse varies from 64 to 80, respiration 18, temperature 99¾° and 100°, one not acquainted with the case would suppose him to be in health and sleeping quietly, head not hot.

22d. No improvement, rather more somnolent, swallowed nothing to-day nor could he be roused at all; urinates freely, and moans and turns from one side to the other at intervals, head still retracted, pupils normal.

He died the morning of the 29th, after a very restless night. The following is the result of the *post mortem*:—

Highly inflamed meninges of cerebrum with effusion. The lungs were much congested on posterior portion, which accounted for the increase of temperature, pulse and respiration. All other organs of body were normal. The patient could be aroused to consciousness every day of his illness except the 22d, and after the second blister raised, the retraction of the head gave way and he could lie on his back. He had no paralysis nor convulsions, no inequality nor insensibility of pupils at any time. I considered the congestion of the lungs to be hypostatic, caused by defective function of the pneumogastric nerve, but the primary disease to be cerebral meningitis.

Dr. S. P. ZIEGLER contributes the following:

A case of *chronic cerebral meningitis*. William D., aged nineteen years, complained for several months of dullness, pain in the head, sometimes very acute, at other times of a dull and heavy pain, unable to concentrate his mind on his studies at school. March 8, 1882, Dr. I. E. Van Camp was called to take

charge of the case. Symptoms, as described by the doctor, while treating the case: "Frontal headache, heavy and dull, with an occasional acute and darting pain. After administering purgatives and bromide of potassium the pain in the head abated, and sudden motion or rolling of the head produced pain only; depression of spirits and a desire to roll from one side of the bed to the other, a feeling of fatigue, pain in the back and limbs, soreness and increased sensibility on pressure over the whole abdomen were also present; extremities cold, mind clear but heavy. There was no intolerance of light, pulse 80, temperature ranging from 98½° to 101°, tongue coated with a white, slimy fur, urine scant and heavily loaded with uric acid, partial strangury, nausea and vomiting of a muco-biliary matter, bowels constipated, some thirst. Prescribed hydrarg., chlo. mite, ipecac and bromide potassium. March 10th, added pulv. rhei and pulv. jalap to former prescription; March 11th, no action on bowels, added podophyllin. March 12th, bowels moved freely, no improvement in the case. Prescribed hydrarg., chlo. mite, subnit. bismuth, ipecac., and bicarb. soda. March 13th, condition about the same. March 16th, bowels constipated; directed tablespoonful of castor oil at intervals until bowels moved freely. March 18th, eight o'clock A. M., found the patient with no material change; two o'clock P. M. was hastily summoned to my patient, and, to my surprise, found him in a semi-comatose condition.

March 18th. When I was called in consultation with Dr. Van C. The symptoms were as described by the doctor; patient could be aroused to notice any loud call, and responded to questions by shaking his head; sound, and rapid motion produced acute pain in head; pulse 48, temperature 99½°, tongue moist and lightly furred, respiration (20) free and full, bowels open, urine scant, with ammoniacal deposit, pupils of eye nearly normal, but not active to light or sensitive to touch, surface of body, head and neck, cool to the touch. Diagnosed cerebral meningitis, of a low grade; prescribed hydrag., chlo. mite, bromide potassium, digitalis, nitrate potassa, bicarb. soda and ipecac.; blister to nape of neck, beef tea and milk as nutriment.

March 19th, 11 o'clock, A. M. Patient had a restless and delirious night; pulse 54, temperature 99¼°, kidneys acting more freely and less deposit, unable to protrude his tongue, respiration normal. Same treatment continued, shaved the head and

applied a large blister over the parietal bones, also a blister on each leg below the knee, all to be dressed with hot linseed poultices. Beef tea and milk punch as nutriment.

March 20th, 11 o'clock, A. M. Blisters vesicated freely, continued hot applications, pulse 64, temperature 101°, tongue moist and lightly furred with red edges, kidneys acting more freely and urine nearly normal, bowels slightly moved, pupil not active to light nor sensitive to touch, delirious at times and very restless; the same treatment continued.

March 21st, 11 o'clock, A. M. Pulse, temperature and other symptoms about the same as yesterday, with increased respiration and a hawking of tough mucus from the pharynx and trachea, with a slight mucous rale in bronchial tubes. Added to former prescription, quinia sulph., and continued hot applications to the head.

March 22d, 11 o'clock, A. M. Pulse 130, temperature 101½°, respiration 40 and labored, with an increase of heavy tough mucus, which he was unable to throw off, no delirium, answers questions rationally and protrudes his tongue without difficulty, pupils of eyes respond freely to light. Ordered quinia sulph., whiskey and diffusible stimulants freely. Patient died 6 o'clock, P. M. No autopsy. I report this case briefly and accurately, with a view, if possible, to arrive at a satisfactory reason of the sudden transition of disease from the brain to the lungs, and why it so rapidly proved fatal.

REPORT OF THE DELAWARE COUNTY MEDICAL SOCIETY.

EDWIN FUSSELL, M. D. 1813–1882.

By ELLWOOD HARVEY, M. D.

The subject of this memoir was one whose unambitious life was more distinguished for usefulness than popular reputation. It was a controlling motive of all his actions to do right toward other individuals, and to help on all public advancement of mind and morals, even at the sacrifice of his personal interests.

Dr. Edwin Fussell was born in Chester County, Pennsylvania, June 14, 1813. His boyhood was passed in working on his father's farm, and his education was obtained chiefly by study at home. At the age of twenty years he began the study of medicine in the University of Pennsylvania, and graduated in 1835. After practicing one year in his native place, he removed to Indiana, where he remained seven years. From there, after six years more of residence in Chester County, Pennsylvania, he went to Philadelphia, where he remained until 1868. In 1853 he was elected to the professorship of Anatomy and Histology in the Woman's Medical College of Pennsylvania, which position he filled very ably until 1857, when he was transferred to the chair of Obstetrics and the Diseases of Women and Children. This was a position more congenial to his tastes and more in accord with his attainments; for his gentle and sympathetic disposition had inclined him to that special department of practice, and in it he had achieved a well-merited reputation. In 1865 he accepted a transfer to the chair of Principles and Practice of Medicine, which he continued to fill until 1868, when failing health compelled his retirement, for a few years, from his profession, to a farm on the sea-shore, near Cape May.

When Dr. Fussell accepted a professorship in the Woman's Medical College he did so at the risk of forfeiting the fellowship of his medical brethren, for the cause represented by that college was intensely unpopular among conservative people, and especially so to physicians, who could not overcome, at once, a feeling of professional jealousy toward women as physicians. But he was accustomed to encounter public disapproval in his resolute advocacy of temperance and abolition. Indeed, he inherited the mental temperament that impelled him to do

whatever he believed might be of public benefit, though at the cost of personal disadvantage. It was his father's brother, Dr. Bartholomew Fussell, of Hamorton, Chester County, who first conceived the idea of the Woman's Medical College; and he, too, was an ardent advocate of temperance and the abolition of slavery.

In 1849 he invited Drs. Edwin Fussell, Franklin Taylor, Michener, of New Garden, Chester County, and the writer of this memoir, to confer with him on the subject, at his home in Hamorton. He resolved to apply for a charter, and agreed upon a distribution of the professorships, but did not agree about the place for location of the college. While this point of difference caused delay, the plan became known to an outside party, who obtained a charter and commenced operations. Dr. Edwin Fussell and the writer united with the enterprise, and were for several years co-laborers in the cause, and intimate friends. When living in Indiana, Dr. Fussell was so earnest in his opposition to slavery as to excite a mob to a violent attack upon him, and the bitterness of opposition compelled him to return to his native county. It was a brave and conscientious man who could face the fierce opposition then raging against the philanthropy of abolition; and those were dark days in the history of our republic when the press and the pulpit reflected the public sentiment that might made right. It may be well for us to remember this unhappy phase of our development as a nation, that we may in future humbly seek the "right" in the full assurance that "might" will follow. In 1871 Dr. Fussell removed to Media, Delaware County, and resumed the practice of medicine. He was a member of the Philadelphia Academy of Natural Sciences, of the Delaware County Institute of Science, of the Delaware County Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association.

As a member of our county society, he was a faithful attendant, a prudent counselor, and always a cheerful presence to the younger members.

In his domestic and social relations he was amply repaid for all he suffered as a philanthropist. In his family he was the affectionate husband of a loving wife and the revered father of dutiful children. In society he had always many warm friends among people of cultivated intellects and refined tastes. No one who was capable of appreciating him could fail to respect him. Yet when these are all told,—the record of a life busy in doing good,—the best can never be told. The "little nameless, unremembered acts of kindness and of love," the kindly smile, the gentle word, the cheery joke,—these were the daily habit of his life, and are sunk deep in the hearts of those who knew him.

REPORT OF THE ERIE COUNTY MEDICAL SOCIETY.

Erie is the only lake-shore county in Pennsylvania, situated at the extreme north-west corner of the State, bordering on the shore of Lake Erie for forty-four miles. The best marked topographical feature which controls the drainage of this county is the high divide which passes through the county from north-east to south-west, separating the waters flowing into the Gulf of Mexico from those meeting the ocean in the Gulf of St. Lawrence. This ridge is much the highest in the eastern part of the county where it enters from New York State, gradually declining until it passes into Crawford County about eleven miles from the Ohio line. The county being on the divide between two such extensive basins the streams are necessarily small. Those draining the lake slope in the eastern part of the county run very rapidly north-west direct to the lake, while in the western part they run parallel with the lake shore in the upper part of their course, finally bending sharply towards the north to their outlets. The drainage on the south of the divide is much less rapid than on the north slope, and is almost entirely into French Creek, a tributary of the Allegheny River. While in eleven miles the land slopes from sixteen hundred feet on the east, and eleven hundred and fifty feet on the west above tide to five hundred and seventy-three feet at Lake Erie level, the water in one hundred miles, air line, on the south, falls one hundred feet less.

The population of the county is derived from New England and German stock largely. Dairying forms the business of a considerable portion of the farming population. The seaport of Erie, the only one in the State, a city of over thirty thousand inhabitants, is largely engaged in manufacturing, in addition to the lake trade centring at this point. The city of Corry, an important railroad centre, is situated in the east end of the county, near the New York and Warren County line.

The surface rocks of the county may be briefly stated to be sandstones and drift, with extensive alluvial formations. The third oil sand of the Venango region crops out in the county, yielding here just enough oil to be seen and smelt, and forms the high divide between the lake and the gulf. Some small sections south of the divide are capped by the Cussewago shales and sandstone of Catskill age. The rocks of the divide (the Venango oil group) are generally considered as of Chemung age. Under this formation going north we find Girard flags and shales till at the lake shore we come down to the Portage group, which is there exposed, the exposure increasing in thickness as we go east. No limestones worth mention are found in the county.

Malarial diseases, diphtheria, etc., are much more prevalent in the county south of the divide than on the lake slope. Since your reporter has lived in the county (since 1874) he has seen *north of the divide* in his field of practice only three cases of malignant diphtheria, two of which were sequelæ of scarlatina, while the districts just south of the divide have been repeatedly scourged by this dread malady. The severest epidemic of any kind which has come to my knowledge during the past year has been one of diphtheria, the habitat of which was Waterford and vicinity just south-east of me across the divide on the gulf slope. From accounts of this epidemic furnished me by the Waterford physicians, I learn that there were two hundred and one cases of diphtheria treated by three practitioners, fifteen of which were fatal. No causes are assigned for the outbreak save those of atmospheric origin. Nothing new in treatment is reported by those having charge of these cases. The above is certainly a small mortality for diphtheria if the diagnosis was uniformly correct.

Several lakes and marshes are found just at or over the divide on the south which breed malaria plentifully. It is the opinion of several medical men, who have expressed themselves on the subject recently, that there has been a slight increase of malarial diseases in the last decade on the lake slope, but we are comparatively free from such troubles. The city of Erie has been afflicted with typhoid fever and diphtheria of late years more than formerly, which is attributed to the existing plan of sewage and water supply. The water for the city's use is taken from Presque Isle Bay, a land-locked sheet of

water which forms the harbor of the port. A narrow channel communicates with the lake at the east end of the bay. Into this bay runs the sewage of the city, much the larger portion of which reaches the bay by Mill Creek, which is thus made the main sewer (an open one) for the city. This stream is small, and is almost dry at times in the summer. It flows into the bay west of and near the channel connecting the bay with the lake, and at some distance east of the water-works. It is proposed to build a dam across Mill Creek, a short distance above its mouth, and turn the creek, by a new channel to be dug, out into the lake east of the bay. This will undoubtedly improve the water very much, but this *main sewer* is not the only source of contamination of Erie's drinking water. Let us quote concerning the situation from the late report of the Water Commissioners of the city. They say:

"The Mill Creek improvement should receive first attention, for it is practical, and its benefits will be immediate. With Mill Creek running outside the harbor, the people will wait patiently till a half-mill tax yearly will furnish the means to complete the work. This should be built westwardly far enough to intercept the canal sewer as rapidly as possible. The character of the foreign substances brought down to the bay by the canal sewer is more objectionable, if possible, than Mill Creek with its burden of filth; but the remedy is not so easily applied as in the case of that stream. The outlet of the canal sewer is so near to the inlet pipe of the pumping works that it has a better opportunity for evil influence. This and the Peach Street sewer are the only streams running into the west canal basin. The basin has but two outlets—one under the bridge on State Street, and the other just west of the public pier. The consequence is that the whole volume of water of the west canal basin is corrupted, and, although a large body of water, it is discolored almost to the shade of ink, and is so foul that fish cannot live in it. Yet the principal outlet to this is very near to our water-works, and where a current from the east would carry it in front of our water supply.

"The evil is a growing one. The causes operating to affect the purity of the water are accumulating. The people complain. The Board of Health urge it upon the attention of the city authorities. The grand jury have time and again

pronounced it a nuisance. Public interest has been deeply awakened in the matter by the newspapers. Required by law to furnish good and wholesome water to the citizens, but powerless to act in the premises, we appeal to you to take such steps as shall secure the desired result at the earliest practicable moment."

As an outsider we will only add that the reputation of this rapidly growing city as a summer resort fanned by the refreshing lake breezes, which it has already earned, will be greatly injured unless its authorities bestir themselves. Let the needed improvements be made, and Erie will be much better known in future as a summer sanitarium. The other towns of the county all take their water from wells, and the supply is generally abundant and wholesome. The following are notes taken from mortuary statistics of Erie in our possession, premature and still births being included:

Deaths from	1879.	1880.	1881.
Consumption,	64	70	80
Acute lung diseases,	8	42	46
Diphtheria,	19	32	50
Typhoid fever,	11	6	24
Diarrhœal diseases,	12	25	87
Total deaths,	405	491	549
Estimated population,	27,000	28,000	30,000
Mortality per 1,000,	15	17.53	18.3

The spring of 1881 being remarkably cold, damp, and late, brought a good supply of rheumatic complaints. Your reporter never has seen so much rheumatism in the same space of time as last spring. The hot, dry summer made cholera infantum and kindred diseases unusually prevalent throughout the county. Other epidemics of lesser importance were heard of here and there. Small-pox has visited us but little. A few cases have been reported in Erie, a few in East Mill Creek and Summit townships, the cases in the other localities arising from an individual being exposed to contagion from one of the Erie cases. We have had just enough small-pox to awaken the people to their danger, and to make vaccination general.

Not having any material to use in the way of interesting or rare cases from other practitioners, I venture to report two of my own which in some respects were very interesting to me. I was called to visit Mrs. S., who was about six months pregnant. Had treated her a short time before with oxalate cerium for

nausea with good effect. Learned that she had had three convulsions when I arrived. She was comatose when I first saw her. She had in all eleven convulsions. The pulse being at that time nearly normal, I gave her repeated enemata containing each thirty grains of chloral hydrate, with the effect of greatly lengthening the interval between the successive convulsions, and also rendering them shorter and lighter. As soon as the pulse became more frequent and bounding, blood was abstracted, and Norwood's tincture of veratrum given, but from the prompt and well-marked effect of the chloral I question if the drug would not of itself have stopped the eclampsia. No specimen of her urine could be had for some time, and when obtained and examined, it was found to be loaded with albumen. The history given by her husband was that for several days the urine had been quite scanty, and she had suffered with violent headache. No labor pains were present, and no effort at artificial extraction of the child was made. It was supposed that so many convulsions had destroyed the life of the fœtus, but on examination next day the fœtal heart was found to be beating as briskly as ever. With good care, use of sudorifics, diuretics, chloral and potass. bromide, the woman made a good recovery. In about two weeks she was delivered safely, with no untoward complications during labor, of a dead child, which had died about nine days after the attack of convulsions. Some of my professional brethren will say, Why did you not deliver as soon as possible after the commencement of the attack of eclampsia, artificially, if labor did not soon supervene? but somehow I cannot but believe that Schrœder (Manual of Midwifery) preaches good doctrine when he says that in puerperal eclampsia "no kind of obstetric manipulation is required for the safety of the mother. The condition of the woman contra-indicates obstetrical manipulations, and every irritation of the uterus such as introduction of the hand for the purpose of turning, application of the forceps, or even mere friction of the fundus, is apt to cause a fresh attack by reflex action." Indeed, I doubt if this woman would have had her two last convulsions had she been let alone by troublesome friends, who were bound to see if they could not, by shaking her, rouse her to consciousness so they could have a last word with her. Schrœder says again that "however, in the interest of the child, active procedure may become necessary," on this account, "if the child can be

delivered easily by turning or the forceps, it is certainly in the interest of the child to do so." In my case it would surely have been unwise to artificially, for the child's sake, have extracted a six months' fœtus.

I was called to a case of poisoning in which the patient had purposely taken a tablespoonful of Paris green about half an hour before my arrival. I gave her large draughts of milk with light calcined magnesia stirred in it, and tickled the fauces with a feather, after each draught, to produce free emesis. This treatment was employed until about seven pints of milk had been taken and ejected, and the stomach was so well washed out that no tinge of green was seen in the ejecta. I then used hydrated oxide of iron, and the usual after treatment, with a successful result. The object in using the milk and magnesia was so that I could tell from the color of the ejecta when the stomach was pretty free from the poison. For this purpose I consider it excellent.

D. R. WAGGONER.

McKean, Pa.

REPORT OF THE FAYETTE COUNTY MEDICAL SOCIETY.

Fayette is one of the south-western counties of the State, two hundred and ninety miles in a direct line west of, and in the same degree of latitude as Philadelphia, forty miles south of Pittsburgh, and within the second degree of longitude west from Washington.

It is bounded on the north by Westmoreland County, on the east by Somerset County, from which it is separated partly by the Youghiogheny River and partly by Laurel Hill, of the Allegheny Mountains; on the south it is bounded by the States of West Virginia and Maryland, and on the west by Greene and Washington counties, being separated from them by the historic Monongahela River, a stream of considerable size arising in West Virginia, and, flowing north, joins the Allegheny at Pittsburgh, to form the Ohio. Slack water is maintained to West Virginia line by six dams, pools Nos. 4, 5, and 6 being on the western border of this county. The Monongahela is navigable for large steamers as far south as the West Virginia State line.

For the last forty years there has been a line of fine steamers running between New Geneva (in southern part of this county) and Pittsburgh. The line is now composed of three side-wheel boats, each one hundred and seventy-five feet long, forty feet wide, allowed to carry two hundred passengers, and of three hundred tons' burden.

With the amount of agitation necessarily caused by the passage of these and many other steamers (the river having a mean width of four hundred yards) there is little of malarial fever caused by the slack water; at least there has never been any along the river, to the best of my knowledge.

The area of the county is eight hundred and twenty-four square miles, and has a population of about sixty thousand. The highest point (the Summit House, on Chestnut Ridge) is

2,660 feet above tide-water, and the lowest—being in the vicinity of Bellevernon—is about 730 feet above tide-water.

The richest portion of the Pittsburgh bituminous coal-field underlies this county; the principal strata, having a mean thickness of nine feet, are being actively mined. This coal is second to none for the manufacture of gas and coke.

The Fayette County Medical Society was organized June 25, 1844. President, Dr. H. Campbell; Treasurer, Dr. S. Fuller; Corresponding Secretary, Dr. A. H. Campbell, and Recording Secretary, Dr. H. F. Roberts. Members: Drs. Campbell, Johnston, Post, Thompson, Roberts, Stanley, Worrell, Miller, Fleming, Jones, Lindley, Robinson, A. H. Campbell, S. Fuller, Neff, Penney, Merchant, Lafferty, Mathiot, Shugart and Fetter.

This Society was active for a few years only. In about ten years from time of its organization there was no Fayette County Medical Society.

It was re-organized in 1869. Officers as follows: President, Dr. W. S. Duncan; Vice-President, Dr. J. S. Van Voorhis; Recording Secretary, Dr. J. B. Ewing; Corresponding Secretary, Dr. H. L. Roberts; Treasurer, Dr. William H. Sturgeon; Censors, Drs. Knox, Conkling and Hazlett.

The Society is now in good condition, both in regard to the working qualities and number of members; the latter especially is constantly increasing, despite the lamentable fact that death has removed two valuable members during the last year.

Four meetings are held each year, which the majority of members usually attend.

At the last meeting the Society indulged in a little departure. Instead of meeting in Uniontown, as has been the custom heretofore, it met in Connellsville, a flourishing town in the heart of the great coke region, on the Youghiogheny River, which runs through the county in a north-westerly direction, and empties into the Monongahela at McKeesport. About one-third of the county is on the north-east side of this river. This was an interesting meeting, but no doubt it would have been more so had each member done his part.

Dr. E. B. Philips reported a case of puerperal pleuro-pneumonia, giving minute details of symptoms and treatment; death twelfth day after confinement.

During a discussion on laceration of the cervix uteri, Dr. J. S. Van Voorhis stated that he had attended eighteen hundred cases of obstetrics, and that no patient of his had ever had a laceration of the perineum or cervix uteri. He has only used the forceps six times.

Dr. J. J. Singer reported several cases of diphtheria. He observed that whenever the false membrane extended into the posterior nares the case proved fatal.

From a paper read at a previous meeting by Dr. J. S. Van Voorhis, on *Sepulture and Cremation*, we make the following extracts:

I wish to direct your attention to the comparative merits of sepulture and cremation, as sanitary measures.

The desire for change is so interwoven into the disposition of mankind that it often appears to be one of the natural elements. This desire pervades every department of life, and its demands are beyond satisfaction. It has even entered into the sanctity of the dead, and would by violence destroy the time-honored custom of burial, and substitute the barbarous rite of cremation.

Although millions of the dead were placed in these subterranean vaults, yet history, whether sacred or profane, fails to tell us of the unhealthy odor emitted from these bodies, or the adoption, in a single instance, of any sanitary measure looking to a correction of evil tendencies of this mode of disposing of the dead. The Appian Way—the pride of Rome—was underlaid with dead, and the surface overlaid with costly monuments commemorative of the virtues of those whose bodies were concealed beneath.

It is true that bodies were burned in olden times, but in no instance is it alleged that the burning of the body was resorted to as a sanitary measure. During all the wars of the past, we have no record in medical science of disastrous results of the sepulture of the dead, although in many cases the bodies were scarcely concealed beneath the ground. Paris, Constantinople, London, Canton, etc., are all surrounded by catacombs and other devices for burial of the dead, and yet no elaborate works have ever been issued condemning the practice until the enthusiasts of change have entered upon a warfare against the established doctrine of primitive creation, and its sequences.

The grave-yards of the aborigines are numerous all over Western Pennsylvania, many of which in the Monongahela Valley we have visited. It is estimated that the number of burials, in this valley, of the native tribes, exceeds those of the whites, since their settlement, and yet the health and longevity of the Indian has never been questioned. The Indian has ever had too much respect for the dead to give even assent to cremation, except as a mode of punishment inflicted on an enemy. The earthy bases of these bodies are now only found, the remaining portions having long since become incorporated into and made a part of the mother earth, instead of being, by a crematory process, spread broadcast into the wilderness or

held in reserve for the inspection of the curious. The beautiful cities of the dead, on the banks of the Schuylkill, not far above the dam which supplies the city of Philadelphia with water, have never been accused of being the nidus of epidemic disease. On the banks of this classic stream many years since, victims in countless numbers of the cholera were buried in trenches, from which it never has been alleged any noxious vapors were emitted. In opening sewers recently the bones of these victims were exhumed, and, on inspection, were found to be free from all taint or smell, showing at once that the deodorizing as well as the disinfecting agency of the earth had performed their duties to perfection. The Allegheny and other cemeteries might be cited as examples. The city of Paris and its vicinity is undermined with vast caverns, in which are to-day found thousands of skeletons in all degrees of decay, the custom being to exhume at different times the dead, so as to make room for others, and the bones, having lost their animal matter whilst in the ground, are collected for deposit in these catacombs; yet the city of Paris has a world-wide reputation for health, its medical men occupying the highest rank in the profession, and its medical schools are sought out by students from every nation.

The vicinity of grave-yards has never been established by hygienists as sources of disease. On the contrary the inhabitants adjacent thereto have been as exempt as any other locality during the prevalence of epidemic disease.

The cremationist of to-day proposes as an effectual sanitary measure the burning of the human body after death. Thus far, as a matter of economy, or health measure, its advocates have failed to demonstrate its superiority. The cost at the Lemoyne furnace amounts to about fifteen dollars, exclusive of certain contingent expenses not mentioned; only a few funerals ever cost that amount. About eighteen bodies have been cremated in the United States. All of these, except four, have passed the crucible erected by the late Dr. Lemoyne, at Washington, Pa. The burning of the body of Baron de Palm was the first exercise in this now well-known furnace. This first cremation was heralded abroad as the initiation of a new state of things.

The mere cremation of the human body is worthy of no consideration, and confers no good on any department of life unless it carries with it some practical lesson. In case of the Baron, we were told that it would initiate new sanitary ideas, that would aid in prolonging life. How was it? Did they work out the difference between the effluvia arising therefrom and the natural atmosphere in our beautiful cemeteries of the dead? It is true, it was asserted, that for a time a hissing noise was heard, and black smoke, attended with a disagreeable odor, was given off, but failed to give any evidence to satisfy the public of the nature of the elements entering into the composition of that odoriferous smoke. Such an odor is no doubt identical with that which would be emitted in the grave-yard were it not for the positive disinfecting agency of the earth.

It is a settled principle that disease resides in that part of the body known as fluids, and hence in cremation the germ must either be destroyed or sent broadcast into the surrounding atmosphere. We have no evidence of it being destroyed, hence the contrary must be conceded, according to our

present knowledge. Our conclusion, therefore, is that the burning of a body affected with contagion will surely generate an epidemic. In case of the Baron, the remains were five pounds, yet the advocates of cremation failed to determine otherwise than that the one hundred and forty-five pounds were evaporated, and became for a time a constituent element in the surrounding atmosphere, ready to be inhaled by the innocent citizen, unconscious of the nature of the disease-germ he may be taking into his lungs at every inspiration. Such an effect is so self-evident that the rules of the Lemoyne furnace prohibit the cremation of a body affected with contagious disease. This fact sets up at once a barrier against universal cremation. On the other hand, burial of the dead shuts off all fear of epidemic disease, no matter of what ailment the person may have died. Earth is the great disinfectant, always having, and ever will protect the living from the effect of diseased dead. If it can be shown that the fluid portion, in which disease resides, has been consumed, after being separated, then the horror of the disagreeable odor and black smoke will vanish, and then the evaporation would not impregnate the surrounding atmosphere with disease-bearing germs.

No disagreeable odor ever arises from burial-places, and sextons, proverbial for their longevity, living in close proximity, are as exempt from disease as any other class of citizens. No odor will ever permeate the ground from a body buried beneath the surface as deep as is the custom, owing to the well-established principle that the earth is not only a disinfectant agent, but it will decompose animal matter by a chemical process, and transform the elementary principles into a new compound similar to itself and innocent in its nature. Medical history and common observation have failed to trace any epidemics to the effluvia of the buried dead; but instances are not rare, where the origin of disease has been the result of the burning of articles of clothing and other material. This fact is so well known among the masses of the people, that such burning will not be tolerated without earnest protest, and in many places municipal regulations prohibit the burning of dead animals, lest within might be concealed the germs of disease. Victims of cholera, small-pox, etc., have always been interred in common with other dead, yet we hear of no complaints of or protests against the custom. It is the gas that goes abroad ladened with disease. It was the lead in gaseous form that cost the Pittsburgh lead works so much money. Facts and figures thus far convince us that the advocates of cremation have failed to demonstrate its superiority as a sanitary measure. The medical profession must cease to speculate over ill-devised hypothetical notions which *per se* have no practical value.

Dr. S. Buttermore, of Connellsville, reports as follows on Diphtheria:

"About September 1, 1880, I attended one of the first cases which gave rise to the chief epidemic of that year. The house was located on an elevation in the hill part of town; beyond this was a deep ravine. In a few days, on the opposite side of town near the river, the dread disease, diphtheria, made its appearance.

"For sixty days our town felt a shock not felt for thirty years, if ever, before. I am not able to assign any one cause. During the latter part of the year some cases of scarlatina followed.

"The next year, about the same time, the disease reappeared, but not quite so violently, yet some of the cases were quite malignant, and terminated much in the same manner as the year before.

"The late scare of small-pox brought one case to our town."

The principal epidemic diseases occurring in the county during the year have been typhoid fever and small-pox. Diphtheria also prevailed in some localities, but was very light compared with previous years.

Here, in Bellevernon, a severe epidemic of measles, beginning early in the fall, continued until late in the winter. This proved fatal only in a few cases; but the disease was so general that scarcely a person escaped who had had the good—or bad fortune, rather—to escape other epidemics of the same disease, having been exposed with impunity.

Typhoid fever has been epidemic, and in many cases fatal in this vicinity, since late in the summer of 1881, and still prevails, but to a limited extent compared with a few months ago. It was observed, in a short time after the disease first made its appearance, that it was limited to one class of people; that is, those working at a large glass-factory in the upper part of town. Therefore we deemed it our province to investigate and ascertain, if possible, the etiology of this endemic.

This factory is composed of two departments, called the upper and lower houses. It was noticed further that no one in the upper house was affected, while many in the lower house suffered from typhoid. Knowing there must be some cause for this, we inquired as to the kind of drinking-water used in the two houses, and found that in the lower house they used water from well No. 1 exclusively, while in the upper house they used water from wells Nos. 1 and 2, it being carried from the wells and put in kegs, from which the workmen drank *ad libitum*. A short distance (fifty feet) from well No. 1, and on higher ground by about six feet, is a privy vault not one-third as deep as the well into which the fæces of two typhoid fever patients—brought here from a neighboring town before typhoid made its appearance among us—were thrown. From these

circumstances we were led to conclude that from these two patients came the contagion which caused the typhoid fever, and that it was conveyed into the systems of the employees of the glass-factory by means of the drinking-water from well No. 1. Therefore the use of the water was discontinued, and there have been but few cases of the disease since, and these were mostly in the families of those who had contracted the disease at the glass-factory. In one family in particular, the disease multiplied itself in the same manner as at the factory. In this case the privy and well were only twenty feet apart, the latter the lower.

Small-pox visited only a few towns in the county. East Liberty had about forty cases; Uniontown, about thirty; Brownsville, one; and Connellsville, one.

Respectfully submitted,

J. W. WORRELL,

Chairman.

JOHN HAWKINS, M. D.

1849–1882.

Dr. John Hawkins died at the residence of his father-in-law, John Collins, Esq., on March 26, 1882, in his thirty-third year. He was a son of William Hawkins, of North Union Township, and was educated at Waynesburg College, of which he was a graduate. After his return home from college, he read medicine with Dr. Smith Fuller of Uniontown, and graduated at Jefferson Medical College in 1875. He commenced to practice medicine at Upper Middletown, in partnership with Dr. Chalfant, and remained there for several years.

While at Upper Middletown, he was appointed physician to the almshouse, which position he held for three years.

About the middle of September last, he suffered from heat-stroke, resulting from overwork and close attention to the duties of his profession. Having partially recovered, he was attacked by acute rheumatism, which greatly complicated his trouble, and produced a degree of nervous and general prostration which the unceasing attention of his physicians and friends failed to relieve.

Dr. Hawkins was a member of the Fayette County Medical Society since the year of his graduation, and was secretary for several terms. He was a successful physician, and had the good will of all who had the pleasure of his acquaintance. He leaves a wife to mourn the loss of a good and kind husband.

Uniontown, Pa., October 4, 1882.

LUTELLUS LINDLEY, M. D.

1808–1881.

The Lindleys of America trace their English lineage through Francis Lindley, who came to this country with his Puritan brethren from Holland in the Mayflower. Demas Lindley, the grandfather of the late Dr. Lutellus Lindley, migrated from New Jersey and settled on Ten-Mile Creek, Washington County, Pa., about the middle of the eighteenth century. The Rev. Jacob Lindley, Dr. Lindley's father, was born in a block-house, the resort of white settlers for protection from the Indians. The Rev. Jacob was educated at Princeton College, and early in his ministerial career removed to Athens, Ohio, and took an active part in the establishment of the Ohio University at that place, of which institution he was president for over twenty-five years. His oldest child was the Rev. Daniel Lindley, the famous missionary, under the American Board, to South Africa, where he remained twenty-seven years. He died in New York at the venerable age of eighty years.

Dr. Lindley was born at Athens, Ohio, February 1, 1808, and educated at the Ohio University, from which institution he graduated at the early age of eighteen years, after which he went to Virginia, and taught a private school, composed of the children of several neighboring planters. In 1831 he betook himself to Ten-Mile Creek, Pa., and studied medicine with Dr. Henry Blatchley. In March, 1834, he located in Connellsville, Fayette County, where he practiced medicine with credit to himself and satisfaction to a large clientage up to within a few weeks of his death, which occurred October 25, 1881. Dr. Lindley was singularly devoted to his profession during the long period of forty-seven years that he devoted to it. Besides maintaining a creditable place in his profession, he was noted for his urbanity, generous hospitality, and scrupulous integrity, thereby commanding the confidence, as well as the affection, of his neighbors. Dr. Lindley was twice married; first, in 1833, to Maria Blatchley, daughter of his medical preceptor. She died in June, 1841. In July, 1842, he was married to Mary A. Wade, daughter of James Wade, of Fayette County. His first wife left one son, Henry Spencer Lindley, who now practices medicine in Perrysville, Allegheny County, Pa. His second wife bore him four sons and one daughter. The first-born son, Clark, was accidentally killed while a student in Allegheny College, at Meadville, Pa. The daughter, Carrie L., is the wife of Rev. C. W. Smith, of Pittsburgh Conference of the M. E. Church. Lutellus W., the doctor's second living son, graduated at Jefferson Medical College, and practices in

partnership with his half-brother, Henry S. The third son, Frank M., studied medicine in Jefferson Medical College, and practices his profession in Connellsville, Fayette County. The youngest son, Charles D., is engaged in mining at Butler City, Montana.

REPORT OF INDIANA COUNTY MEDICAL SOCIETY.

We have no epidemics to report during the past year. Our physicians report a good degree of health throughout the county. A few cases of small-pox appeared, but were imported into our county; the fatality was very light. Our County Society has met quarterly, and generally quite an interest is taken, especially by our younger members. Our exercises generally consist of oral communications, and papers on some medical subject, with the clinical reports, each being discussed by all members of the Association.

The act of legislation requiring the registration of physicians has been carried out, and some sixty-one names appear upon the roll, all males; fifty-eight regular, two homœopaths and one eclectic. We admit that some of the registrations are interesting reading matter, but we feel we are one step nearer right than before.

We regret, however, that out of this number we only have sixteen regular members of our Society; perhaps one reason is the poor facilities for reaching our county seat, where our meetings are held, some of the members having to ride from thirty-six to forty miles to attend the meetings; but we trust we may be able to report a larger number next year.

During the year but one student has been examined by our committee; namely, Thomas J. Henry of Saltsburg, Pa.

We have one death to report from our society during the year.

S. L. WIGGINS, M. D.
W. T. LARIMER, M. D.
S. R. RUTLEDGE, M. D.

ROBERT BARR, M.D.

1828–1882.

Robert Barr, M. D., was born in Cherryhill Township, Indiana County, Pennsylvania, August 3, 1828. Spent his early life on a farm, was educated at the Indiana Academy (Indiana, Pa.), studied medicine in the office of Dr. Wallace B. Stewart, in Greenville, Indiana County, and gradu-

ated at the Jefferson Medical College, Philadelphia, 1854. Located in Armagh, Indiana County, the same year, and practiced profession in that place till 1859, when he removed to Indiana, which he claimed as his home till his death, March, 1882. In 1861, Dr. Barr was appointed Surgeon of the Sixty-seventh Regiment Pennsylvania Volunteers, and in a short time was appointed Surgeon of Third Brigade, Third Division, Third Army Corps, and in a short time Surgeon of Third Division, Sixth Army Corps, which position he held until his term of service expired, 1864. Dr. Barr was a member of the Indiana County Medical Society, and of the Medical Society of the State of Pennsylvania. He was married, in 1868, to Miss Cordelia Elder, who survives him; they had no children. His health had been declining for a number of years, but he was able to be around his home until a few weeks before his death.

REPORT OF THE LANCASTER COUNTY MEDICAL SOCIETY.

Since our last report our society has held its meetings regularly on the afternoon of the first Wednesday of each month.

The meetings have all been well attended, and we are glad to report that that harmony of feeling and unanimity of zeal which has characterized its deliberations for the past few years continues.

Our membership has been largely increased during the year. It might be interesting to state that, during the past decade, although our society is third in point of numbers in the State, death has not stricken a name from our roll.

Of the diseases most prevalent in this county during the year, we would especially mention whooping-cough, measles, scarlet fever and diphtheria, none of which, however, prevailed very extensively, or were very malignant in character.

A greater prevalence than usual of malaria, and its influence over the course of other diseases, has been observed by the profession throughout the county during the year.

The limited legal protection our law-makers have secured by the "Registration Act," which is far from being all we could desire, is certainly a step in the right direction, and we hail it as an omen of better things in the future.

The last annual meeting of the Pennsylvania and Maryland Union Medical Association, for an account of which see Transactions Lancaster City and County Medical Society, Vol. II., No. 3, was participated in by many of our members. The annual reunions of this Association have come to be regarded as oases in the lives of the busy practitioners who compose its membership.

Of the cases reported and papers read during the year we may mention the following:—

By Dr. Oliver Roland:

A complicated case of congenital phymosis. After giving a history of the case and describing the operation necessary for

its relief, the doctor concludes his report by saying: "Another remarkable feature of this case is that this young man, though at one time of life a school teacher and now a student in one of the learned professions, had, until I explained the nature of his deformity to him, no idea that there was anything amiss with one of the chief organs of his body."

By Dr. ALEX. CRAIG:

Report of a few cases of *post mortem* examinations made during the year, of sudden deaths from heart disease of various kinds. The doctor prefaced his report with some very good remarks upon the importance of *post mortem* study of disease.

By Dr. H. B. STEHMAN:

A case of ulcer of the stomach successfully treated.

"James H. C——, æt. 40, a carpenter. The complaint began two years ago, with pain in the breast, stomach and back; loss of appetite, pain after eating which was proportionately intense after a heavy meal, severe attacks of pain, paroxysmal in character, which lasted three or four days at a time. This pain was nearly absent when the stomach was empty, though not entirely so in the back.

Besides pain, there were heartburn, slight headache, and an abnormal sensation in the lower part of the œsophagus. Patient passed light-colored blood, but this may be attributed to hæmorrhoids. No belching, no vomiting at any time. He was very weak, and had lost about forty pounds during this time. Pulse 80, respiration normal. On palpation I found localized pain, which extended from a point a little to the left of the median line across to the hypochondriac region and down to the umbilicus.

The pain in the back was located a little below the margin of the left shoulder blade, and extended up under it; it was sharp and lancinating in character. No pulsation of aorta; no murmur; heart normal; no cough. Had been under treatment for two years, with no benefit, and the paroxysms became not only more severe, but likewise more frequent and consequently more debilitating.

Treatment.—The diet the first week consisted of one quart of milk, and one pint of lime-water during the twenty-four hours, to be taken at intervals of every three hours. The lime-water was given to diminish to the greatest possible degree any digestion whatever in the stomach. The second week the milk

was increased one pint, and the lime-water in proportion. The third week two quarts of milk, with increase of lime-water. At the end of this week I allowed a small quantity of boiled rice. Three days later I permitted an egg to be added; and at the beginning of the fifth week he took a soft-boiled egg daily, for breakfast, and one during the afternoon.

During the first two weeks he lost $12\frac{3}{4}$ pounds by actual weight, by far the greatest loss, however, being during the first week; the next week there was no material change, but during the following eleven days he gained $2\frac{3}{4}$ pounds. Internally he received one drop Fowler's Solution, with five drops dialyzed iron three times daily. As his feet and hands were cold, and skin clammy, I ordered him a salt-water bath every morning after rising. At the end of the first week this circumscribed area of soreness had sensibly diminished. Indeed, this symptom disappeared gradually, week after week, until at last one was able to define even the dimensions of the ulcer. The distress in the back likewise grew visibly less, until, at the end of the fifth week, pain at the angle of the scapula, and over the epigastrium, was only felt upon deep pressure.

The paroxysms never returned after this treatment was commenced, the headaches left, his strength slowly returned, his depression of spirits gradually passed away, and at the end of several months he was able to attend to business again. I should say that I believe the failure of the previous treatment was, to a great extent, due to the fact that an indiscriminate diet was allowed.

Rohrerstown, May 25, 1882.

Dr. T. M. Livingston.

Dear Sir: In response to your request for a report of an interesting and rare case which occurred in my practice, I will submit the following:—

On the 15th of last December I was called to see T. B. M., a boy of about fifteen years. I found that he had been ill for about three months, and was under treatment for *spine disease* by another physician. He was very much emaciated. The skin had a sallow, bronzed appearance. Pulse, 140 per min.; temperature, 103°. There was almost complete anorexia, with marked dyspnœa and a short, teasing cough.

During the night he would suffer with intense pain in the abdomen, accompanied with profuse perspiration, followed the

next day by fever. The cervical glands in the posterior triangle above the clavicle were enlarged to almost the size of a fist. The axillary glands, the inguinal and the epitrochlear glands, above the elbow, were all very much enlarged. By exploring the thorax I could not detect any evidence of tubercular disease; but found by percussion small circumscribed spots of dulness over the whole thoracic cavity, due, I believed, to enlargement of the thoracic glands. Percussion also gave evidence of marked enlargement of the spleen. After carefully studying my case, and finding no tubercular, syphilitic or scrofulous disease, diagnosed it as Hodgkin's disease, or lymphadenosis. I then prescribed a mixture of hydrarg. bichloride, and syr. sarspa. comp., with cod-liver oil, and anointed the body from head to foot daily with ol. olivæ, and gave morph. acet. for the abdominal pain, which, by the way, I believed to be due to disease of the mesenteric glands. There was no material change in the case for about two or three months, excepting the abatement of his abdominal pain and a decrease of the temperature and pulse, with general and progressive emaciation. About the middle of March he became subject to attacks of spasm of the epiglottis, which were so severe that death from asphyxia would seem inevitable. They would always occur while masticating.

At this stage of the case Dr. Dunlap, Sr., of Manheim, was called in consultation. He concurred with my diagnosis, and the treatment was continued, but without any improvement, as he still continued to emaciate, becoming gradually weaker, and more prostrated, and on the 15th April, 1882, died from asthenia.

Among the essays read before the Society during the past year, we feel it a duty, as well as a privilege, to make reference to one presented by Dr. B. F. Herr, of Millersville; subject, *General Paralysis of the Insane*, in which he gave his experience while a student under Dr. Richardson, of the Philadelphia Hospital. As described by the writer, it is a disease of mature life, and usually presents itself in the form of melancholia, progressing into a more decided type of insanity when paralysis joins in the complications. Throughout, it is one of those progressive diseases that almost invariably resist treatment.

From his experience he observed "that fast living, intemperance, and excessive venery have been the cause of this disease

in every case," and that "exhaustion from nervous energy, from a legitimate indulgence, or the pernicious habit of self-abuse, are the causal phenomena chiefly concerned in the factorship of this fatal disease."

"Regarding the treatment we can say but little; but taking into consideration the hopelessness for recovery of these patients, we can easily comprehend that all the medicines are merely palliative."

We also feel it our duty to speak of another carefully prepared essay read by Dr. H. B. Shirk, of Lancaster, upon the unpleasant but all-important subject of *Dysmenorrhœa.* After referring to the most prominent characteristics of the disease, its nature, seat, etc., he says: "In treating of the pathology of dysmenorrhœa the subject will be simplified by adopting the usual classification, as follows: 1. Neuralgic dysmenorrhœa; 2. Ovarian dysmenorrhœa; 3. Congestive or inflammatory dysmenorrhœa; 4. Spasmodic dysmenorrhœa; 5. Membranous dysmenorrhœa."

He exemplified the subdivisions of his subject by giving his own personal observations, together with a reference to the best authorities he could find, and concluded with the following treatment, which may be palliative or radical. As regards palliative treatment, this is about the same in all the forms of dysmenorrhœa,—the severer cases, of course, requiring more energetic measures than the milder ones. It consists, in one word, in anodyne remedies. This seems very simple, and yet considerable nicety is sometimes required in the selection of remedies and the mode of administration. Of all the narcotics, opium, in its numerous forms, is, perhaps, more useful to relieve pain than any other; but its drawbacks are numerous. Many women are unable to use it at all, on account of a peculiar idiosyncrasy, and in many its effects on the digestive organs render it a very unpleasant medicine. Combined with belladonna it loses much of its disagreeable effect.

"In severe cases, one of the quickest and most powerful, and, upon the whole, perhaps the best remedy, is a hypodermic injection of $\frac{1}{6}$–$\frac{1}{4}$ of a grain of morphia with 1-100 of a grain of atropia.

"In mild cases the comp. spirits of ether is a very effective remedy. Hot foot-baths, warm sitz bath, the use of hot ginger tea, hot punch, etc., are all of more or less service.

"Absolute rest in the recumbent posture is a very important and too much neglected matter.

"Cannabis indica is highly recommended by some authorities, and chloral, ext. gelseminum, the bromides, etc., all have their advocates. The ammoniated tincture of guaiacum, the great favorite of Dr. Dewees, and the black hellebore, Professor Meigs' remedy, are now little used probably, because *fashion* has much to do with the practice of medicine.

"Neuralgic dysmenorrhœa requires quinia and arsenic, if malaria is the cause; if anæmia is present, iron must be employed.

"Scarification of the cervix *just before* the menstrual period is one of the most valuable remedies in congestive or inflammatory dysmenorrhœa.

"In obstructive dysmenorrhœa we meet with two conditions requiring mechanical treatment—uterine flexions and cervical stenosis." For the relief of the former he advised the use of a pessary to suit the case, and for the latter "we may resort to tents, the tupelo tent being preferred here, or steel-branched dilators, or else we may incise the cervix, as Simpson first suggested."

We feel that we should not conclude our report without referring briefly, at least, to a paper upon the subject of *Conservative Surgery*, read by Dr. Alexander Craig, Surgeon for the P. R. R., at Columbia.

After presenting an interesting case, in which a very useful foot, with full use of the ankle joint, had been saved from what at time of injury seemed to offer nothing better than amputation, the doctor remarks: "Injuries to the feet are very common about the railroad, and as a rule I look upon them as being more serious than larger wounds about other parts of the body. The great danger is that of tetanus; where I can control the patient I insist upon elevation and rest. Indeed, I believe the use of the splint in the treatment of a large proportion of such injuries would prevent many deaths from tetanus."

Special reference was made to the management of wounds in persons who have to be conveyed to a hospital or some point where their injuries are to undergo further treatment. He says: "To preserve contused, lacerated tissue, it is of the greatest importance that the circulation should be guarded and encouraged to and beyond the seat of injury."

"I do not think that words can be found to sufficiently condemn the use of the tourniquet during the transportation of those hurt along the road, *save where there is free arterial hemorrhage.*

"Limited bleeding can usually be controlled by compresses to the seat of injury. The loss of a few ounces of blood is nothing compared to the loss of a hand or foot. I would urge you all, when called to these cases, to keep cool while others are excited, and always give the life of the limb the next chance after the life of the patient."

Two very similar cases of recent injury at the elbow were reported to illustrate the importance of this matter. In speaking of the one case he says: "I cannot blame the men (employees of the road) for what they did, for they supposed they were saving a life; but I regret it exceedingly, since the hemorrhage would have been trifling if the constriction above had not been applied, and the prospects for saving a good, useful arm and hand would have been increased a thousand fold."

"Gentlemen, it is a serious matter to compel a man in the prime of life to sacrifice his right arm when it could about as easily be saved."

"With railroads everywhere, carrying with them constant danger to life and limb, it is important that we should familiarize ourselves with the management of such accidents."

"With the two cases properly managed, I think both should have had their arms saved, the first with a limited motion at the joint and the other with anchylosis." "As it is, I expect to be compelled to amputate the latter, although I have given him all the chance there is to re-establish circulation, and will report my success at some future meeting."

T. M. LIVINGSTON,
Chairman of Committee.

REPORT OF THE MERCER COUNTY MEDICAL SOCIETY.

The Society meets now every two months, second Tuesday of January, March, May, July, September, and November. Our meetings are usually well attended. We have twenty-six members in our Society, being about one-half of the regulars in the county. There are now about fifty-eight regulars registered. Full number registered, 85.

Our county has been very free from epidemics during the last year. Through the western part of the county some cases of cerebro-spinal meningitis have occurred. Pneumonia has not been so general this last winter and spring as usual in reports of most of the physicians. One, however, reports that during March and early in April it was almost epidemic in his practice. Sharon had what at one time seemed as if it was going to give us an epidemic of small-pox, for it broke out in six families, and before decided steps could be taken in regard to it, four other families were exposed, giving us, in all, nineteen cases; but prompt measures then were taken. Cases all placed in hands of one physician. No members of the families allowed to leave their homes, neighbors all forbidden to go near the houses, and general vaccination practiced, and so what at one time caused serious alarm soon died out, no new cases developing after the diagnosis became known and vaccination being performed, except in one case,—that of a nursing infant whose mother had varioloid. There were four children in the house who had not been vaccinated. It was performed at once, and mother advised to wean this one. She failed to do so, and the vaccination did not take on it at all, but on the eleventh day the child was taken down with small-pox. The other children escaped, vaccination taking on all of them.

Dr. A. T. Clark, of Greenville, kindly furnishes me with the following report of five cases of typhoid fever, chiefly in reference to their bearing on the etiology of the disease, with also some remarks on its treatment.

"G. P., age about fifty, came from near his home, Dempseytown, Venango County, to his brother's, in West Salem township, Mercer County, three miles west of Greenville, sick with typhoid fever. I was called to see him first on November 12, 1881. He had left home complaining of headache three or four days before, and had left a sister and her family sick with the same disease, of which his sister soon died. I did not see the sister or her family, but have no doubt of the diagnosis. There was no typhoid fever in the neighborhood to which he (G. P.) came, nor had there been any for two years.

"The diagnosis was made early, and proper means employed to disinfect the discharges from both the bowels and bladder. They were received in a vessel containing a saturated solution of sulphate of iron. This was continued until two other members of the brother's family had taken the disease. The house in which he lay had no proper means of ventilation. His room—a small bed-room—was heated by a wood-fire in an adjoining sitting-room, and, as both rooms could be well heated by the one fire, with a sash opened (raised or lowered) in the bed-room, the air was kept from being absolutely bad.

"December 1, W. P., the brother's son, age thirteen, who had been much in the room adjoining the one his uncle was in, and between which rooms the door was constantly opened, took the disease; and four days later the boy's sister, aged twelve years, sickened.

"Up to this time there had been no diarrhœa, in the uncle's case, except after the administration of cathartics, and all the passages had been disinfected, as above stated; but on the fifth or sixth day,—a day or two after the girl took the disease,—her uncle suffered from both diarrhœa and hemorrhage from the bowels following, which I believe was caused by cold-water applications to the abdomen for the relief of meteorism. At this time the house had every chance to become infected, if it be true that the typhoid poison is generated or carried in the fecal discharges. During the next twelve days two others took the disease.

"Of these five cases, four were grave and one mild. All recovered. The gradual rise in temperature was well marked in all, and reached $105\frac{1}{2}^{\circ}$ in two of the cases, thermometer tested by the Yale standard, immediately after the recovery of the cases, and the above reading corrected accordingly. Diarrhœa

was present at one stage or another in four of the cases; tympanites in all; deafness in three.

"The question upon which these cases bears is that of the transmissibility of the disease direct from one person to another, and I have reported only points bearing upon this question. The cases summed up are as follows: G. P., sick with typhoid fever, came fifty miles to his brother's home. Three weeks after his arrival, and before any fecal matter or urine had been voided except into vessels containing a disinfectant, two of his brother's family contracted the disease, and then after there had been involuntary passages in the first case, and the house had become infected, two others sickened with the same disease. All recovered, and the epidemic, if you see fit to call it such, ceased, for there have been no other cases in the neighborhood.

"The question may arise, and a doubt exist in the minds of some, whether my directions were strictly carried out and the discharge so thoroughly disinfected as I suppose. In private practice generally such a doubt is reasonable. In this case there is none in my mind. Barring that doubt, it seems to me there is but one way left to account for the two cases following the first,—that of direct exhalation from the body of the first. It is too much for me to believe that a focus of contagion could have been established by the first, from which the others could have been infected, and after these had contracted the disease the focus or foci were destroyed and the epidemic was at an end. I believe that many country physicians will see in these cases a counterpart of their own experience. I could add others bearing nearly as well on the question of the direct contagion of the disease. I am unable to reconcile my own experience with that of those in the hospital practice, among whom the opinion seems to be gaining ground, especially in Germany, that the disease is infectious, and not contagious. The question occurs to me, Are we not classifying two or more diseases under the name of typhoid fever, as we did thirty years ago typhus and typhoid under the name of typhus? About six years ago I commenced the use of calomel again in the treatment of this disease, and a year or two later the use of antipyretics, so far as that result can be obtained by the use of large doses of quinine and cold sponging. With the former I am satisfied that I can shorten the duration of an attack in many cases, and possibly save some lives that would otherwise have been sacrificed.

I administer it according to the teaching of Leibermeister. If I get the case during the first week, and there is no diarrhœa, from four to six and eight grain doses are given six hours apart. If diarrhœa is troublesome, I give the same amount or more, but give it in divided doses and at shorter intervals. In this way the diarrhœa is more likely to be diminished than increased. With the antipyretics I have not been satisfied. While I believe that many lives are lost from a continued high temperature, I am inclined to the opinion that the means we employ to reduce it have destroyed more. Formerly hemorrhage was infrequent, and relapse almost an unknown name. Now hemorrhage is a frequent occurrence, and relapse much more frequent. Deafness is almost always increased by antipyretic doses of quinine, and in some cases for weeks."

J. H. REED.

REPORT OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

REPORT OF THE COMMITTEE ON METEOROLOGY AND EPIDEMICS FOR 1881.

During the year 1881 the only disease prevailing in Philadelphia with sufficient severity to be properly entitled epidemic was small-pox.

The year began with a large number of cases and a correspondingly large number of deaths, reported from pretty much all portions of the city. The cases for the first week numbered 271, and the deaths 55. From that time the wave showed itself to be a declining one, with only the slight rise, which, as was to be anticipated, made its appearance with the approach of cooler weather at the close of the year.

Appended to this report is a chart marked "A," which will show the course of variola and its congener, varioloid, during the year. Upon the same chart will be found marked the course pursued by typhoid fever during the same period, so far as it is indicated by the deaths reported to the Health Office.

In the table marked "B" will be found a weekly record of the cases of small-pox and varioloid reported to the Health Office during the year, and of the deaths resulting from the former disease. Upon the same table will be found a record of the deaths from scarlet fever, diphtheria, and typhoid fever. The law requires that all cases of these latter diseases shall be reported to the Health Office; but as many members of the profession fail to do so, it has been thought best merely to record the number of deaths resulting.

In table "C" there will be found the total number of deaths from all causes, the thermometrical and barometrical conditions, together with the rainfall for each week in the year.

In the chart marked "A" the deaths from typhoid fever are indicated by a *red* line, those from small-pox by a *black* one, while the number of cases of variolous disease are designated by a *blue* line.

A reference to the table "B" will show that the mortality from typhoid fever was 645,—the highest figure reached since 1876; and that the ascent was, as is usual, most marked in the latter months of the year.

We have considered it preferable simply to present these ables, as we think the mere reading of statistics both unprofitable and dull, and that their profitable analysis can only result from close individual study. Instead, therefore, of taking up the time of the Society by an attempt to analyze the figures obtained, we will take the liberty of referring the members to the tables which accompany this report, and which were kindly prepared for your committee by Mr. George E. Chambers, Registrar of the Board of Health.

In place of an analysis of figures, your Committee ventures to present some opinions concerning the prevalence of small-pox, a disease so disastrous and so disgraceful to the community in which it exists,—disastrous, because seriously affecting material interests; and disgraceful, because it is in the fullest sense of the word preventable.

It has been said that the variolous wave was a declining one during the year, but that, at the same time, the wave was always high. Nor are the causes for such a condition of things difficult to determine. They are to be found in insufficient and inefficient vaccination. For insufficient vaccination the city authorities are, in very large measure, responsible. The appropriation for public vaccination was exhausted by the end of March, and despite the repeated appeals of the Board of Health to City Councils, no money was granted for that purpose until the month of December. During all that time the disease was allowed to go on without any attempt upon the part of the authorities to check it, excepting only such benevolent labor as was bestowed by the vaccine physicians, in gratuitously vaccinating the inmates of houses in which cases occurred, in generous response to the requests of the Health Officer. Upon such ill-judged parsimony it is unnecessary to comment.

To thoroughly test the efficacy of vaccination, and to secure to the community the highest degree of protection it is capable

of affording against the onslaughts of variola, it should be borne in mind that at least 220,000 primary and secondary vaccinations should be done each year in Philadelphia. Were such a number of operations done, the population would be vaccinated every four years; and then, and not till then, can it be shown how complete is the exemption furnished by Jenner's great discovery.

That the operation of vaccination is inefficiently done in some cases hardly admits of question, and is proven by actual observation. For this the medical profession is responsible. From the necessity of yielding to popular prejudice against the use of humanized matter, bovine virus has been largely and, indeed, almost exclusively, resorted to by very many physicians. Of this material much is of inferior quality, and some of it is often too largely diluted.

Then, it is a question of importance whether the results of the operation are not very carelessly observed, and the error quite often fallen into that the soreness and amount of local inflammation consequent upon vaccination is the sufficient test of its efficiency.

In this connection it is well to draw attention to the experience of many physicians that humanized virus two or three times removed from the cow is more rapid in development, and its insertion attended with less severe local manifestations than is found to be the case with that taken directly from the heifer.

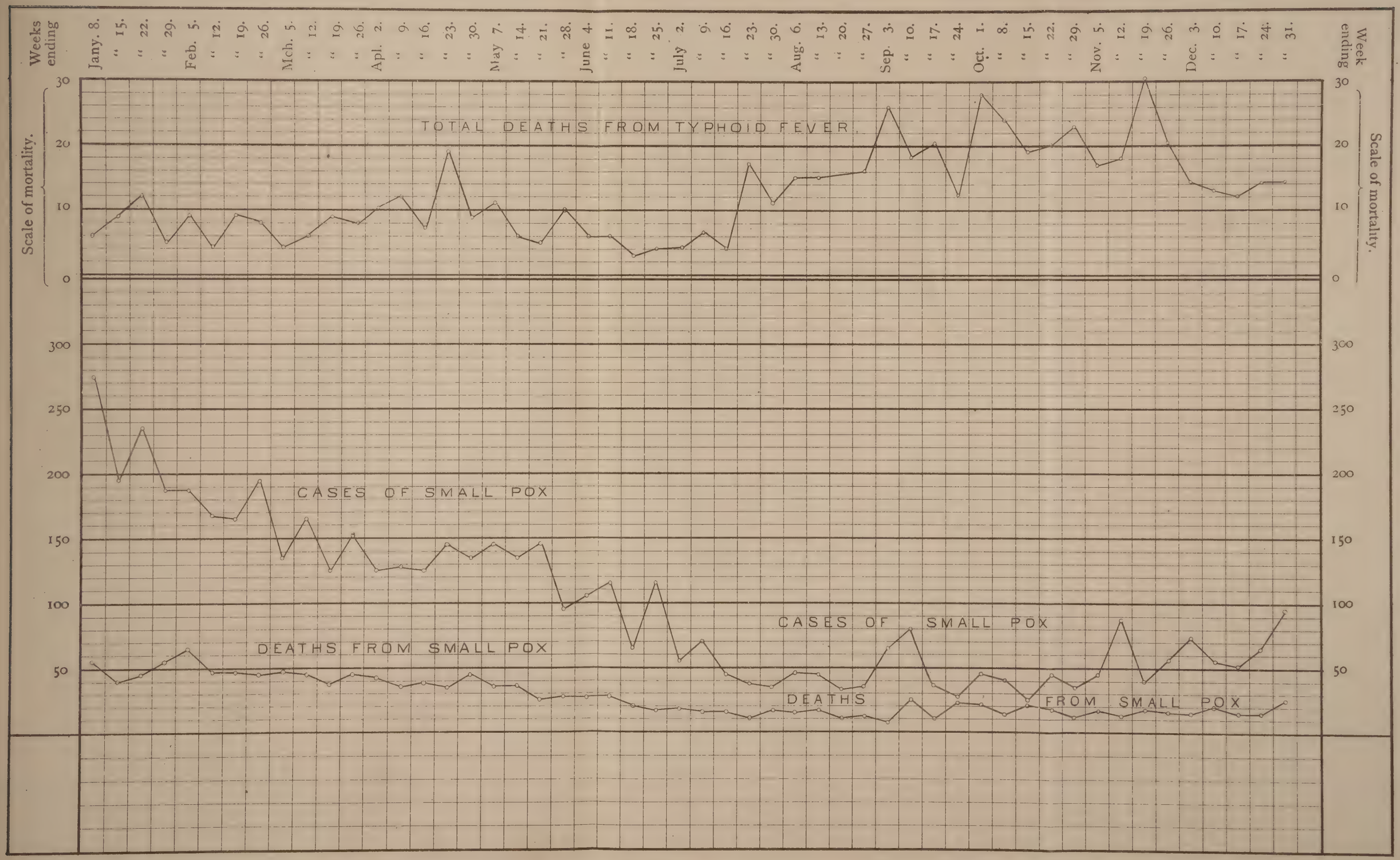
It is not the place of a Committee on Meteorology and Epidemics to dilate upon vaccination, but it may not transcend its duties to place upon record its firm conviction that in repeated and properly conducted vaccination is to be found the remedy for variolous epidemics, and that in the neglect of that precautionary measure is to be found the cause of the recent prevalence of the disease.

SAMUEL ASHHURST,
H. AUGUSTUS WILSON,
J. M. KEATING,
I. M. HAYS,
MICHAEL O'HARA,
Committee.

(A.)

CHART

Showing the course of Small-pox (cases and deaths) in Philadelphia, also the deaths from Typhoid Fever, during the year 1881.


Weeks ending
Jany. 8. " 15. " 22. " 29. Feb. 5. " 12. " 19. " 26. Mch. 5. " 12. " 19. " 26. Apl. 2. " 9. " 16. " 23. " 30. May 7. " 14. " 21. " 28. June 4. " 11. " 18. " 25. July 2. " 9. " 16. " 23. " 30. Aug. 6. " 13. " 20. " 27. Sep. 3. " 10. " 17. " 24. Oct. 1. " 8. " 15. " 22. " 29. Nov. 5. " 12. " 19. " 26. Dec. 3. " 10. " 17. " 24. " 31.
Week ending
Scale of mortality.
30
20
10
0
TOTAL DEATHS FROM TYPHOID FEVER.
300
250
200
150
100
50
CASES OF SMALL POX
DEATHS FROM SMALL POX
CASES OF SMALL POX
DEATHS FROM SMALL POX

B. Weeks Ending 1881.	Small-pox.		Diphtheria.	Scarlet Fever.	Typhoid Fever.
	Cases.	Deaths.			
January 8,	271	55	8	12	6
" 15,	192	40	11	14	9
" 22,	236	47	13	5	12
" 29,	186	54	5	15	5
February 5,	189	61	5	9	9
" 12,	166	49	7	13	4
" 19,	162	49	5	6	9
" 26,	194	44	7	6	8
March 5,	132	49	7	8	4
" 12,	168	45	4	13	6
" 19,	125	37	6	7	9
" 26,	150	43	3	6	8
April 2,	123	41	3	8	10
" 9,	129	36	2	12	12
" 16,	126	37	5	5	7
" 23,	148	33	6	12	19
" 30,	132	42	5	14	9
May 7,	146	35	12	14	11
" 14,	134	35	6	19	6
" 21,	149	23	12	12	5
" 28,	94	29	7	20	10
June 4,	105	27	7	11	6
" 11,	118	29	5	14	6
" 18,	64	20	7	10	3
" 25,	119	15	6	16	4
July 2,	54	18	3	16	4
" 9,	70	16	13	22	6
" 16,	42	14	8	6	4
" 23,	39	10	8	14	17
" 30,	36	12	12	5	11
August 6,	45	11	3	9	15
" 13,	44	12	6	4	15
" 20,	32	10	5	4	20
" 27,	34	10	8	7	14
September 3,	62	9	10	10	26
" 10,	80	25	8	15	18
" 17,	39	10	5	3	20
" 24,	27	12	7	5	12
October 1,	44	11	7	7	28
" 8,	40	7	13	4	24
" 15,	26	11	11	7	19
" 22,	42	9	12	5	20
" 29,	34	6	15	10	23
November 5,	42	13	18	6	17
" 12,	88	11	20	8	18
" 19,	40	18	16	3	30
" 26,	54	16	21	2	20
December 3,	71	14	16	7	14
" 10,	56	20	13	6	13
" 17,	50	16	6	5	12
" 24,	66	11	13	6	14
" 31,	93	29	16	9	14
	5108	1336	457	486	645

TOTAL WEEKLY DEATHS (STILL-BORN EXCLUDED) WITH METEOROLOGICAL OBSERVATION, ETC.

C. Weeks Ending 1881.	Total deaths, (S. B.) excluded.	Thermometer.			Barometer.	Rain.
		Mean.	Max.	Min.	Mean.	Inc.
January 8,	391	28.3	40	11	30.17	1.03
" 15,	366	27.0	44	9	30.06	2.—
" 22,	368	30.3	42	17	30.11	.63
" 29,	402	23.0	34	12	30.25	—
February 5,	405	18.2	35	.–1	30.21	.65
" 12,	407	38.1	61	17	30.28	1.06
" 19,	411	32.4	47	21	30.23	1.92
" 26,	369	30.4	44	10	30.20	.30
March 5,	381	34.3	56	22	29.66	1.63
" 12,	401	39.8	56	25	29.82	1.57
" 19,	388	42.1	61	32	30.04	.76
" 26,	384	39.9	50	28	29.65	.06
April 2,	370	37.9	51	29	29.58	.76
" 9,	429	37.0	53	22	29.82	.01
" 16,	412	47.7	62	38	29.71	.35
" 23,	423	51.1	72	38	30.06	.06
" 30,	397	62.9	82	45	30.00	.08
May 7,	382	54 8	68	42	30.24	.52
" 14,	380	72.1	92	47	30.05	.10
" 21,	366	58.8	82	47	29.85	1.97
" 28,	317	66.2	84	55	30.11	.10
June 4,	302	69.2	89	52	29.80	1.86
" 11,	310	62.4	83	51	29.95	1.12
" 18,	276	69.2	86	55	29.97	.50
" 25,	318	67.9	86	53	29.95	.11
July 2,	320	74.1	89	61	29.93	.33
" 9,	442	77.2	93	62	29.98	—
" 16,	477	77.7	94	64	30.02	.59
" 23,	475	74.9	88	60	20.76	.02
" 30,	446	73.3	89	64	30.02	.11
August 6,	398	78.9	96	66	30.08	.28
" 13,	450	76.0	99	63	29.88	.89
" 20,	400	68.5	80	59	29.98	.16
" 27,	349	73.6	89	62	30.12	.08
September 3,	375	71.5	93	62	30.07	.01
" 10,	419	78.2	101	65	30.10	.30
" 17,	345	70.0	83	60	30.17	—
" 24,	340	72.8	88	54	30.08	.05
October 1,	404	78.1	92	68	30.15	—
" 8,	347	62.9	81	37	30.23	.19
" 15,	339	57.5	74	36	30.27	.59
" 22,	341	61.6	85	46	30.19	.36
" 29,	341	57.3	69	40	29.99	.43
November 5,	324	56.3	70	35	29.94	1.81
" 12,	359	55.0	69	39	30.29	.94
" 19,	328	50.9	68	33	30.21	.09
" 26,	327	36.5	47	24	30.23	.64
December 3,	355	44.0	61	30	30.26	.41
" 10,	356	33.0	50	26	30.16	.14
" 17,	339	40.4	69	25	30.38	.51
" 24,	350	42.5	59	24	30.22	.54
" 31,	414	43.4	62	21	29.90	1.24

ANNUAL REPORT OF THE COMMITTEE ON OBSTETRICS AND GYNÆCOLOGY OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY FOR THE YEAR 1881.

THE following report for the year 1881 is respectfully submitted:—

The past year has not been fruitful in the invention of new proceedings or the discovery of new facts in either obstetrics or gynæcology, but has rather been a period in which the profession has paused in a career of active progress to look back upon the work already done and to judge of its merits.

Among the objects newly introduced to the profession may be mentioned "A new method of procedure in ovariotomy," by Dr. Nœggerath, of New York (*New York Medical Gazette*, March, 1881), by which, during the operation, the tumor, in certain cases, may be emptied of its fluid contents, and, when these are purulent in character, the cyst disinfected, before the incision is carried entirely through the abdominal walls. This is accomplished by a trochar and canula, which latter is retained in its place to serve, first, as a director for the completion of the abdominal section, then as a tractor to draw the emptied cyst out of the abdominal cavity.

The advantages claimed are: *First*, greater facility in operating; *second*, diminution of the dangers from shock and peritonitis from contact of the air and the hands of the operator with the intestines and the peritoneum; *third*, diminution of the dangers of septicæmia, when the cyst contains pus, by its withdrawal and the disinfecting of the pus cavity.

The most interesting paper of the year is Mr. Spencer Wells' report of two hundred additional cases of ovariotomy, completing one thousand cases of this operation performed by himself. In this paper there is a *résumé* of the whole number, with a classification of the results in each hundred, showing a progressive improvement.

In his first hundred operations the mortality was a little over one-third of all the patients operated on—in his last hundred only about one-tenth. Since this decrease in the mortality has been gradual, and in an almost uniform ratio extending over a period of twenty-two years, it cannot have been the result of

accident, but must be ascribed to the advances made in the art of surgery as affecting this branch, and to the improved skill of the distinguished operator.

His best results have been obtained, of late years, by closing completely the abdominal cavity at the time of operation, leaving the pedicle within the peritoneal cavity and without the use of the drainage tube.

Antiseptic precautions by the use of carbolic acid or thymol receive Mr. Wells' endorsement, though the use of the carbolic acid spray he considers of doubtful propriety.

If the list of new subjects to which the year has given birth is scanty and unattractive, the discussions upon subjects which have long been before the profession have been numerous and exceedingly interesting. First, we may mention the discussion before the International Medical Congress at London, upon the merits of carbolic acid spray in abdominal surgery. In speaking of its utility in operations involving exposure of the peritoneum, it was announced by some of the members, prominent among whom was Keith, of Edinburgh, that the dangers of poisoning through absorption of carbolic acid by the peritoneum, were much greater than any benefit likely to be derived from its use; and Keith announced that the brilliant success of his later operations for removal of ovarian tumors, was accomplished entirely without the aid of Lister's antiseptic method. Other members, prominent among the profession, expressed doubts of the protective power of carbolic acid in surgery generally: and although these views were ably combatted, Lister himself admitted that the use of the spray, in operations involving exposure of the peritoneum for any long period, was of doubtful propriety, on account, as he asserted, of the great absorbing power of that membrane.

The operation devised some years since by Dr. T. A. Emmet, of New York, for the restoration of cervical lacerations of the uterus, has also claimed the attention of gynæcologists during the past year. It was originally claimed by Dr. Emmet that these lacerations were nearly always a source of constant local hyperæmia, leading often to enlargement of the uterus, cellulitis and pelvic peritonitis, and always to more or less impairment of the general health, and that, besides these, they were often the direct cause of the development of epithelioma of the cervix uteri. Therefore, it was advised that in all cases where lacera-

tion of the cervix uteri was detected, operation for the union of the lacerated surfaces should be performed. Since the promulgation of these views several years have elapsed, during which it has been discovered by those who were enthusiastic for the operation that it is a proceeding not without danger to the patient, while the profession at large has become aware of the fact that in a large proportion of the cases of lacerated cervix either no symptoms which could be referred to this injury were ever present, or, if present, yielded to general or local treatment without resort to operation.

Dr. Emmet has himself been obliged to modify his views upon the advisability of this operation very materially, and at a meeting of the New York Obstetrical Society, held during the past year, admitted that only such cases should be made subjects of operation in which local or general disease could be rationally ascribed to an existing laceration, and that in no case should the operation be attempted unless entire freedom of surrounding tissues from acute or chronic inflammation should be first ascertained.

The attention of gynæcologists has been, during the year, largely directed to the consideration of that class of operations which have for their object the removal of the entire uterus for the relief of cancerous or other tumors affecting that organ. The method of Freund, by abdominal section, and that originally suggested by Blundell, by incision through the anterior vaginal wall, dissection of the uterus from its attachments to the bladder and the peritoneum, and its removal per vaginum without wounding the peritoneum, have been supplemented by Martin (of Berlin), who operates by division of the posterior vaginal wall through to the peritoneal cavity. The uterus is then retroverted, its attachment to the bladder severed by incision through the anterior vaginal wall and dissection, the broad ligaments tied, and the organ removed through the vagina. Dr. Martin reports six recoveries out of eight operations by this method. Though the previous history of these operations have been far from encouraging, and has shown a greater mortality than almost any other surgical operation tolerated by the profession at the present day, yet the diseases for the cure of which they are undertaken are so necessarily and so speedily fatal, that the profession is led to hope that increase in our knowledge and surgical skill may, in the future,

render the total extirpation of the uterus as safe a proceeding as the removal of diseased ovaries, and enable the surgeon to offer to the patient suffering from so fatal a malady as malignant disease of the body of the uterus, a reasonable hope of recovery. The results in Dr. Martin's cases lead us to believe that the time is not far distant when this hope will be realized.

The year has not been uneventful in operations for the termination of gestation by delivery through the abdominal walls. Lapero-elytrotomy, recently introduced by Dr. T. Gaillard Thomas, of New York, has not met with the approbation of the profession, since it is believed that it offers no greater safety to the mother than section through the uterus; while, on the other hand, it presents additional disadvantages in that it exposes to risk of injury the external iliac vessels, and, from being a more difficult and protracted operation than Cæsarean section, not only requires more skill for its performance than the latter operation, but also exposes the life of the child to greater risk.

Gastro-hysterotomy continues still, as it has for centuries, to offer the safest and most satisfactory method of delivery in those cases of advanced pregnancy in which the *via naturalis* does not admit of the delivery through it of the fœtus with safety to the mother. The modification of this operation, suggested by Blundell, but first performed by Porro, and named after him, has received further attention, and been subjected to practical tests.

The operation was performed in Great Britain, for the first time, in October last, by Dr. T. Spencer Wells, though modified by him to some extent; while by the Porro method the cervix remains as a stump to close the peritoneal cavity and the vagina, Spencer Wells removed the entire organ, terminating his operation after the method of Freund for the removal of the non-pregnant uterus. The operation, in so far as the mother was concerned, was a success.

In discussing the merits of Cæsarean section and its modifications, it may be briefly said that experience has taught us that under fair hygienic conditions, with a healthy uterus, Cæsarean section should always have the preference. Immediate safety to the mother and child should be the primary consideration, and this is best secured, unquestionably, under the circumstances above mentioned, by Cæsarean section. Where the integ-

rity of the uterine walls is seriously impaired by the presence of malignant disease in them, or of abundant fibroid growths, the uterus, either entire or in part, should be removed. So also in those localities in which it has been found that, owing to bad hygienic surroundings, the presence of the uterus, after Cæsarean section, results in almost certain death to the mother, its removal has been found to give her a good chance of recovery, and should, therefore, be done.

In surveying the surgery of to-day one cannot fail to be impressed with the activity presented in that part of it belonging to gynæcology. In no branch of the healing art is there displayed at the present time more genius, more industry, or more rapid progress, than in this. The growth of but a few years, gynæcology has advanced rapidly to the front rank as a field fit for the greatest surgical minds. Accused, as at first they were, of a reckless disregard of human life, gynæcologists are now to be commended as among the great conservators of life and health. Much there was at first to be learned, and many lives were no doubt sacrificed to an unavoidable ignorance; but with time, with patient work, with observation, and with the exercise of the ingenuity of the able men who have dedicated their lives to the work, all this is changed, and now the results obtained in the formidable operations upon the pregnant and non-pregnant uterus and upon the ovaries will compare favorably with those of any of the major operations of surgery. To McDowel, Atlee, Sims, Emmet and others, in our own country and abroad, who were pioneers in these untrodden paths, should be given the credit of bravely battling for the right against the protest and the censure of those who saw less clearly than they did the future of gynæcology.

ELLIOTT RICHARDSON,
Chairman.

PHILADELPHIA, April 5, 1882.

H. LENOX HODGE.

1836–1881.

HUGH LENOX HODGE, the subject of this memoir, was born in Philadelphia on the thirtieth day of July, 1836, and was the fourth son of Dr. Hugh L. and Margaret E. Hodge. In the admirable memoir of the elder Dr. Hodge, which Professor Goodell read before this society, and which has already been

published in its Transactions, he gives a full account of the family from which Dr. Hodge was descended. The date of the reading of this paper is still so recent, that I may, without impropriety, refer to it those of my readers who are interested in details of this description. Sufficient is it to say here, that the family has borne a highly honorable character ever since its establishment in this country.

After receiving a rudimentary education at an infant school, to which he and his five brothers all went, Dr. Hodge entered the classical academy of Dr. S. W. Crawford, at that time situated on Fourth Street below Arch, which he continued to attend until he was prepared to enter the Department of Arts of the University of Pennsylvania. Here he matriculated as Freshman in 1851, and graduated in 1855, having always maintained, during the four years which constitute the college course, a prominent position among the distinguished students of his class. At the final examination he bore away the highest honors, and was in consequence assigned the Greek salutatory at the Commencement.

It is said that Dr. Hodge, before coming to a positive and final conclusion, wavered somewhat in the choice of a profession; his own preference being for that of the ministry, while his family urged him to become a physician. If this hesitation really did exist at first,—and of this there is some doubt,—and if Dr. Hodge, as has been said, decided to study medicine only in deference to his father's natural desire that one of his many sons should follow his own calling, all uncertainty of purpose ceased as soon as his selection was once definitely made, for immediately after his graduation at the Department of Arts of the University he entered upon the study of medicine, with his father as his preceptor, and soon afterwards matriculated at the Medical Department of the same institution. At that time the graduated course of study, which is now one of the prominent features in the instruction at the University, had not been inaugurated; but Dr. Hodge, by the advice of his father, determined to follow the plan not infrequently adopted by city students, of so arranging their attendance upon lectures as to make it necessary to spread it over three years. With this view he attended, during his first year, the lectures on materia medica, anatomy and chemistry only, and devoted the rest of his time to study and dissecting. In this way he acquired a thorough knowledge of the rudimentary branches of medicine before he attempted to become master of those of a more practical character. As I matriculated at the same time, and followed the same course as he did, I was much thrown with him during his student days, and can well remember the great earnestness and diligence which he exhibited in the study of medicine. Rarely, if ever, absent from his seat in the lecture

room, he never suffered his attention to swerve from the lecturer for a moment, taking all the time full notes of his remarks. The late Dr. George B. Wood was at that time Professor of the Theory andPractice of Medicine in the University, and was accustomed to devote an evening to the examination of those students who chose to submit to it, upon the subject of his lectures of the preceding week. This was an ordeal which none cared to undergo except those who felt that they could pass through it successfully, as this distinguished master in his profession was apt to treat with severity any evidence of slothfulness or ignorance of his teachings. It is needless to say young Hodge had no reason to fear this censure, and that he never failed to take his place at these examinations upon one of the three front benches of the old lecture room in Ninth Street. He graduated as Doctor of Medicine in the spring of 1858, selecting as the subject of his thesis "Glycerine." Although it was not then, as now, the custom to announce the names of those who had distinguished themselves in their examinations, it was perfectly well known in the class that no member of it had done himself more credit.

Three months later he was elected resident physician to the Pennsylvania Hospital, and held the position for nearly two years, performing the duties of his office in such a manner as to win the esteem of his superior officers, and the affection and respect of those who fell under his care. While there he early manifested a decided predilection for surgery over medicine, and voluntarily relinquished his service in the medical in order that he might spend a longer time in the surgical ward. The results of his study and observation, while there, were embodied in two papers, which will be more fully referred to in a subsequent part of this memoir. He also acquired there the dexterity and boldness which always distinguished him as an operator. Later in life he enjoyed an enviable reputation, in consequence of his success in tracheotomy, so that his services were often in requisition in cases in which this operation was necessary.

After leaving the hospital he opened an office in his father's house, entering at once upon the practice of medicine under the most favorable auspices. It was probably not later than the following fall (1860) that he began to engage in teaching, joining his friends Drs. J. Cheston Morris and Robert Bolling in a quiz club. He carried the same energy and earnestness which had characterized him in other relations, into his management of this organization; so that when I replaced Dr. Morris, a couple of years later, I found its success fully assured. Quizzing, was, at that time, a necessary and semi-recognized branch of instruction, and, when properly conducted, was by no means synonymous with cramming. The information which

the student had acquired the day previous, during the six or seven hours of attendance upon lectures, often existed in his mind in a confused condition. If the quizzer was fitted for his duty, the intelligent student always left the quiz-room with this confusion lessened, and with a much clearer knowledge of the subject of the examination than that with which he had entered it. But quizzing was not without its advantages to the teacher as well as to the learner; and Dr. Hodge unquestionably derived much benefit from the close association into which it brought him with students whose eagerness to learn acted as a stimulus to his own desire for knowledge. I feel the part I took in the management of this club so far inferior in importance to that borne by my dead friend, that I have no hesitation in saying that in no other similar organization were the interests of the students more closely studied than in ours, and that this was done with little or no regard to the expense incurred. I am sure that his former pupils will all confirm this statement, and bear willing testimony to the self-sacrificing devotion of Dr. Hodge to their interests.

When the late war occurred, it was Dr. Hodge's earnest desire to take an active part in the struggle, but after a full consideration of the subject, he felt that his home duties had the stronger claim upon him, especially since his father's growing infirmities made him almost absolutely dependent upon him. Besides, however, taking a position as acting assistant surgeon at the Satterlee United States Army General Hospital in West Philadelphia, he joined the Reserve Corps of Surgeons, who held themselves ready, at a moment's notice, to join the army in the field in time of emergency, and did actually leave the city on such a call on three different occasions; on one of them riding sixty miles on horseback in a single day, in order that he might reach in time a point at which his services were urgently needed.

In 1863, he was appointed by Dr. Henry H. Smith, then Professor of the Theory and Practice of Surgery in the University, his demonstrator, and continued to hold this position for several years.

In 1864, he was elected one of the attending physicians to the Children's Hospital in this city. Up to this time there had been no separate corps of physicians and surgeons, the physician on duty attending to all the cases which he found in the wards of the small and unpretending hospital, then situated in Blight Street; but soon after he entered upon the service the surgical cases were, by common consent, referred to him; and this continued to be the case until the removal of the hospital to a more suitable building rendered necessary the election of other surgeons and the separation of the staff into surgeons and physicians. The wards of the Children's Hospital have always contained a large proportion of cases of diseases of the joints

and of diseases of the bones. His attention was naturally attracted by these, and he became at once interested in operations and other methods of treatment for their relief. The results of his observations were given in two papers, which will be referred to more particularly farther on in this memoir.

In 1870, upon the appointment of Dr. Agnew to the chair of Clinical Surgery in the University, Dr. Hodge was selected by the Medical Faculty as his successor in the demonstratorship of anatomy, and continued to hold the position, conscientiously fulfilling all its duties until stricken down by his fatal illness. He carried the same liberality which had previously characterized his connection with the quiz club into his management of the anatomical rooms, and expended a large sum of money in order that they might be more attractive, as well as more convenient, for students. He did not, moreover, confine his benefactions to the particular department of the medical school with which he was connected, but having been one of the earliest, as well as the warmest, advocates of an improvement in the course of medical instruction, he subscribed liberally toward the building fund of the University Hospital, which he looked upon as a necessity to its being carried out successfully. A slight hesitation in speech marred the effect somewhat in delivery of what I have been assured, by those fully competent to judge, were excellent and instructive lectures on anatomy. His thorough knowledge of the subject, however, made his demonstrations at the dissecting table clear and intelligible.

At the organization of the Presbyterian Hospital, in 1872, he was appointed one of the attending surgeons,—a position which he continued to hold until his death. His interest in his patients was so great that he did not restrict his visits to his term of service, but went frequently, at other times, to the hospital, notwithstanding its remoteness from his office, to see those cases which, by the consent of his colleagues, had remained under his care.

In 1876, he was elected President of the Pathological Society of Philadelphia, of which he had been a zealous member almost from its foundation, a fact which is fully attested by his numerous contributions to its Transactions. This office he held until the expiration of the term prescribed by the constitution, in 1879. A presiding officer has much in his power. Indeed, he may often make or mar a society. It is, therefore, pleasant to record that during his presidency the Society was prosperous, and the attendance of members at its meetings large. He seems, moreover, to have gained for himself a reputation for dignity and impartiality which prevented his decisions from ever being called in question.

As a writer, Dr. Hodge's contributions to medical literature have not been so numerous as might reasonably have been

expected from a man of his intelligence and opportunities. I learn, however, from those who have been more intimately thrown with him during the latter years of his life, that he kept careful notes of many of his cases, with a view to the preparation and publication of several papers, which he never found time to elaborate. For many years, too, he was engaged with his father in the preparation of the latter's work on Obstetrics for the press. I have been recently assured by one of his brothers, that the assistance he gave his father was so essential that without it this great work would probably never have appeared. Indeed, I know, from constant association with him at this time, how large a share of his time and thought it occupied; and this, too, to the exclusion of work from which he would have himself derived more direct credit.

Very early in his medical career, in fact while still a resident physician at the Pennsylvania Hospital, he published in the *American Journal of the Medical Sciences* for July, 1859, "A Report of Cases in which Metallic Sutures were Employed." Previously to the appearance of this paper, lead sutures had rarely been used at this hospital, and it was undoubtedly due to the interest which it excited that their use became general, not only in the city itself, but in its immediate vicinity.

In April, 1860, Dr. Hodge described in the same journal a modification of Physick's Desault's apparatus for the treatment of fractures of the thigh, in which the use of a perineal band was wholly dispensed with, counter-extension being made by means of strips of adhesive plaster attached to the body of the patient, and by an iron hook fastened to the external splint. The replacement of this complicated apparatus by simpler means of healing this injury, soon after this important modification of it was suggested, is the only reason that the latter did not excite the attention its ingenuity deserved, as it entirely prevented the occurrence of ulceration of the perineum, which, under the old plan of treatment, was very apt to form a troublesome complication.

Among other papers which deserve special mention are the following:—1. "Deformities after Disease of the Hip-joint," which was read before the College of Physicians on October 5, 1866, and published in its Transactions. 2. "Excision of the Hip-joint in Chronic Arthritis in Hip Disease," which was read before this Society, and published in the Philadelphia *Medical Times*. 3. "Kolpo-Cystotomy," read before this Society on March 20, 1879, and published in the same journal; and 4, "The Address in Surgery," before the Medical Society of the State of Pennsylvania at its meeting at Harrisburg in June, 1877.

Dr. Hodge was married on the 7th of January, 1869, to Harriet Roosevelt, daughter of the late Charles W. Woolsey,

of New York, a lady of great refinement and loveliness of character, by whom he had one child, a son, who survives him. The union, which was a most happy one, was rudely broken by Mrs. Hodge's sudden death on April 6, 1878. It is thought by Dr. Hodge's family that he never fully recovered from the shock this calamity inflicted upon him. Indeed, his attending physician, Dr. J. Forsyth Meigs, was disposed to attribute to it the disease of the heart which finally caused his death.

Although Mrs. Hodge had been for some time in delicate health, there was nothing in her condition on the morning of her death to indicate the imminence of danger, and he left her with an easy mind to make his usual round of visits. We may readily imagine his agony at finding her dead when he returned home only a few hours later.

After this Dr. Hodge frequently suffered from attacks of palpitation of the heart. These were not, it would seem, brought on only by exertion, but would sometimes occur in the middle of the night, and wake him from his sleep. They do not appear to have alarmed him, for he refused, when urged by his brothers, to take medical advice, or even to restrict his work within narrower limits, which might possibly, by giving him the needed rest, have prolonged his life, and valuable time was consequently lost. One evening, in the early part of April, while presiding at a meeting of the Philadelphia Society for Organizing Charity, an organization in which he was deeply interested, he was seized with a paroxysm of coughing which he found it impossible to check by the simple means at hand. This prostrated him to such a degree that he was obliged to take refuge in a hotel until he had regained sufficient strength to return home. With the natural reluctance of a man who had up to this time enjoyed exceptionally good health, he was even yet reluctant to give up, and continued to see patients in his office for several days afterwards, and on at least one occasion paid a medical visit to a patient in the neighborhood. Upon his return, however, he was so overcome with fatigue that he at last yielded to the importunities of his friends, and sent for Dr. Meigs, who, with Dr. Stillé, continued to attend him until the end came on June 10, 1881. He bore the long illness which followed, and which was of an unusually painful character, with a patience and gentleness which are said to have been touching to witness, never murmuring at his sufferings, and being resigned to a fate which he must have now known was inevitable.

In the preceding brief sketch of Dr. Hodge's life I have referred only to his relations with the medical profession, but it is only proper to add that he carried the same earnestness and conscientious desire to do his duty into all the other rela-

tions of life. While still a medical student (December 13, 1857), he made a profession of religion in the Second Presbyterian Church of this city,—a church which his ancestors had helped to build up, and in which he had always manifested the greatest interest. When, ten or fifteen years ago, it was determined, in consequence of the removal of the congregation to the western part of the city, to move the church to the corner of Twenty-first and Walnut Streets, he not only subscribed liberally himself to the building fund, but was so active in securing the aid of others that it was largely owing to his exertions that the project was finally successfully carried out. He was ordained an elder in the new church November 7, 1877. His religion was of an unobtrusive character; it nevertheless guided and pervaded his whole life,—for in an intimacy extending over a good many years, I never knew him to do or say aught inconsistent with his professions.

He was eminently charitable. Besides giving freely of his means to the poor and suffering, he often spent a not inconsiderable portion of his day in visiting poor patients, of whom he had inherited a large number from his father. Besides this, he displayed an active interest in the charitable institutions of this city. This was notably the case with the Society for Organizing Charity, of whose governing board he finally became president. He was also a useful member of the Board of Managers of the Institution for the Instruction of the Deaf and Dumb.

In person Dr. Hodge was of more than average height, erect and manly in bearing, with a face which, if not strictly handsome, was comely and agreeable, and expressive of intelligence. His expression may have been thought slightly severe, and his manners austere, by those who knew him slightly; but this expression disappeared when he was engaged in conversation, and his friends knew well that he was full of good feeling towards his fellow-men. As an instance of this, it may be mentioned that, while still staggering from the blow of his wife's death, he sent a letter containing words of Christian hope and comfort to a friend who had likewise met with a severe affliction. On the only occasion that I saw him during his illness, almost a week before his death, when he was suffering great discomfort and was at times delirious, upon my presence being mentioned to him as he awoke from a disturbed sleep, he asked me courteously after my family, and said that it was pleasant to hear my voice again. There were no words of complaint of his suffering, or of the hard destiny which was cutting him off in the prime of manhood.

We have seen Dr. Hodge entering upon the practice of medicine with the brightest prospects of success, to be cut off by death while still standing upon the threshold of the career which the hopes of his friends, not less than a legitimate ambi-

tion, had marked out for him, and when his intellectual powers were at their ripest. How illusory seem, therefore, all human hopes! How vain is all human ambition! These are sad reflections, but there are brighter lessons to be learned from Dr. Hodge's life. Truthful, high-toned, and honorable in all his dealings with men, and conscientious and earnest in the performance of every duty, he has left a legacy to us better than great riches,—for it cannot be taken from us,—the example of a pure and blameless life.

JAMES BURD PEALE, M. D. 1833–1881.

By CHARLES K. MILLS, M. D.

Dr. James Burd Peale, the subject of this memoir, was born in New York City on the 10th of July, 1833. On the side of his father his ancestors were English; on that of his mother, Scotch-Irish. On both sides they held a distinguished place in the history of Pennsylvania and of Philadelphia. The name of Peale is one of the most prominent in the art history of our country, and of this city in particular. Dr. Peale was the fifth child and fourth son of Rubens Peale. His grandfather was Charles Wilson Peale, a distinguished artist, and colonel in the Revolutionary Army, who was born in Queen Anne County, Maryland, in 1741, and died in Philadelphia in 1827. Charles Wilson Peale was the founder of Peale's Museum. Rembrandt Peale was one of his sons. Artists of distinction have been known in the Peale family for several generations.

The mother of Dr. Peale was Eliza Patterson, the daughter of George Patterson and Jane Burd. Her paternal grandfather, Captain James Patterson, was a noted Indian fighter when Pennsylvania was a province. Her maternal grandfather, Colonel James Burd, was also prominent in the military history of central Pennsylvania in colonial times. Her maternal grandmother was Sarah Shippen, daughter of Edward Shippen, who was mayor of Philadelphia in 1744, and whose grandfather was the first mayor of Philadelphia in 1701.

Rubens Peale, the father of Dr. Peale, lived for a time in Baltimore, and also in New York, conducting the museum which had been removed from Philadelphia. Dr. Peale, as already stated, was born in New York. While yet a boy, his father removed to Schuylkill County, eventually settling on a farm six miles below Pottsville.

For several years Dr. Peale attended a private school at Pottsville. He entered upon the study of medicine with Dr. James Carpenter, one of Pennsylvania's most celebrated physicians, and formerly president of the Pennsylvania State Society. Dr.

Peale doubtless owed much of his success as a practitioner to the instruction and example of his distinguished preceptor.

He matriculated in the Medical Department of the University of Pennsylvania, at which institution he graduated in March, 1856.

Shortly after graduation, he located in Reading, Pa., where he remained a short time. After leaving Reading he was in New York City for a few months. In 1859 he came to Holmesburg, Philadelphia County, where he was located during the rest of his life except the time spent in the army.

In 1860 Dr. Peale was married to Mary McBurnie, of Philadelphia, by whom he had two children, one of whom died in infancy; the other is still living. His wife died of phthisis in 1866. In 1868 he was married a second time to M. Rebecca Wilmer, of Maryland, a sister of Bishop Wilmer, of New Orleans. By this wife he had four children.

Dr. Peale's early career at Holmesburg was not without the incidents of toil and struggle so common in the history of a young practitioner of medicine. In two years, however, he had succeeded in laying the foundation of a fair practice, when the breaking out of the Civil War called him, for a time, to a new sphere of action. His army history was one of considerable brilliancy, and not without points of special interest. I will therefore take the liberty of giving a brief sketch of his military career, condensed from a volume compiled by Francis B. Wallace, and entitled "Memorials of the Patriotism of Schuylkill County, Pennsylvania."

Dr. Peale was commissioned as Brigade Surgeon October 30, 1861. On December 2, by Special Order 318, he was assigned to Department of Potomac, to duty on General Stahel's staff, First Brigade, Blenker's Division. December 12, 1861, he went into winter quarters at Hunter's Chapel, Virginia, until March 10, 1862, when the advance toward Richmond took place. When Dr. Peale's Division reached Warrenton Junction, on the Orange and Alexandria Railroad, it was ordered to march by way of Ashby's Gap in the Blue Ridge, and Berry's Ferry over the Shenandoah River, to Strasburg. Failing to cross the river at that point, the division went to Snicker's Gap and Ferry, and thence through Berryville to Wood's Mills, four miles from Winchester. The sick of the division were sent thence to the Union Hotel, in Winchester. While at Wood's Mills, General Rosecranz took command of the division. The management of the hospital established in the Union Hotel not pleasing General Rosecranz, on the 4th of May he ordered Dr. Peale to "take charge of and organize as a Post Hospital" the Union Hotel Hospital. This was an exceedingly difficult duty. He succeeded, however, to the satisfaction of the proper authorities. While he was on this duty

the division was marched by way of Romney to General Fremont's command, which it joined.

By May 23d the sick, left under Dr. Peale's charge, had all been sent away to the hospital at New Creek and back to their commands, except twelve, who were too ill to be removed. That night at eleven o'clock he learned that the enemy had attacked our forces at Front Royal on the Shenandoah, defeated them, and were approaching Winchester. Deeming it his duty to remain with those committed to his care, under any circumstances, Dr. Peale communicated his determination to do so to his assistant surgeon and to the few attendants remaining. They all expressed their intention of doing as he did. General Banks, having fallen back from Strasburg to Winchester, on the 24th of May, was attacked by Jackson's forces, and driven to and across the Potomac River. The sick who were able to walk from Strasburg, came into Dr. Peale's hospital on the evening of the 24th. About nine o'clock on the 25th, Dr. Peale was taken prisoner, and directed by the Rebels to continue attending the wounded as they were brought in by their (the Rebel) soldiers. Dr. Black, acting medical director of Jackson's forces, called upon him during the day, and informed him that he was to take charge of all the Federal sick and wounded, and organize a hospital in the same building he then occupied, the Union Hotel. All the wounded brought in, and all the sick from the three Union hospitals in Winchester, were then brought to the "Union Hotel" and placed under his care.

When the Rebels evacuated Winchester, Dr. Peale took charge of all the hospitals that had been occupied by them,—three in number,—and assigned surgeons from those who were assisting him, with assistants and necessary attendants, to each.

When General Banks occupied the place on the sixth day after the Rebels evacuated, approving of Dr. Peale's conduct, he granted him leave of absence for seven days to visit his family. June 19th, General Siegel being in command, by Special Order No. 81, Department Shenandoah, Section IV., Brigade-Surgeon J. B. Peale was appointed Chief of Hospitals, to carry out the provisions contained in "Sections 2 and 6 of General Orders No. 36, Adjutant-General's Office, Washington, April 7, 1862." Dr. Peale was at the second battle of Bull Run, August 30, 1862. About December 7, 1862, by Special Order No. 132, Headquarters Eleventh Army Corps, he was assigned to duty at headquarters as Medical Inspector of the Corps, on which duty he remained until his resignation was accepted, April 29th, in consequence of ill health, caused by exposure during the winter.

While on duty in Winchester as chief of hospitals, he organized a hospital in James M. Mason's house for the sick of Fremont's department, who were then in that city.

After leaving the army, Dr. Peale returned to Holmesburg, and, after a few years, built up a large and lucrative practice, which he retained until his death. He did most of his own surgical and gynæcological work. He kept himself well posted in current medical literature. He was positive and self-reliant in character, and persevering in his methods. He took considerable interest in American archæology. For several years before his death he was one of the directors of the Forrest Home for Aged and Infirm Actors.

Dr. Peale was a good husband and kind father. Devotedness to his family was one of his strongest characteristics. While a student of medicine he was confirmed in the Episcopal Church, and ever afterwards was a faithful, active and consistent member of the same. For more than twenty years he was affected with a disease of the valves of the heart. On the 2d of March, 1882, he suddenly expired while on a visit to the Forrest Home.

REPORT OF THE SNYDER COUNTY MEDICAL SOCIETY.

The geography and topography of our county have been given heretofore in previous reports, and on that account will be omitted.

Our Society still holds its meetings quarterly, and generally at Middleburg, the county seat. We have lost some old members since the adoption and appointment of an examining board. The reasons for their withdrawal are not well founded for an enlightened and progressive age, and should be derogatory to the dignity of a man in the profession to stand as a barrier against the advancement of our noble healing art. So long as medical men refuse to join societies, and will admit students irrespective of either qualifications or character, while some pretending medical colleges, with outstretched arms and empty seats, welcome such aspirants, with no motive in view save the round dollar, this *must be*, and I am pleased to see that the State Medical Society is about taking a *bold* and *firm* stand to eradicate this growing evil. Since the *lame registration law* is in force, I find twenty-eight names recorded in the office, barely two-thirds the number practicing in the county.

At our meeting in Middleburg, May 4, 1881, the President delivered the annual address; and the extirpation of a tumor from the neck of a young woman, added value for those present. At subsequent meetings valuable papers were read, and patients were examined and their cases diagnosed.

The committee on statistics regret that the different members failed to furnish the material out of which to construct the report, and on said account it will be but short; however, not without kindly thanking those that have given us a helping hand. So far as we have been able to gather facts, the health of the county during the year now closed has been poor. The diseases have been diversified; the fevers have been of a continued and typhoid nature mostly, while many proved fatal.

Pneumonias, also, running into typhoid symptoms, and convalescing after the third, fourth, and some the sixth week. A few cases of scarlet fever appeared in the western part of the county. In one of the families where it first appeared, it was very contagious, as there were four children, ranging in age from twelve years to six months; but it visited them all. Temperature in axilla rose to $105\frac{3}{4}^{\circ}$ F., while dropsy appeared in two out of the four cases, though none were fatal.

An epidemic of diphtheria occurred in the south central part of the county. In and around Freeburg it was fatal in quite a number of instances. The treatment pursued I cannot give, not having had a communication from that place. Quite a number of cases of tonsilitis occurred in the early part of the spring; in some, convalescence was slow and lingering.

Have had two cases of trichophytosis barbæ in the same family. The patients had heavy-bearded faces, and the disease had run on for several months. They were exceedingly disfigured; ulcerations had taken place, and the treatment was prolonged. However, a perfect cure was the result. Various remedies were tried; among the most efficient were the compound tincture of iodine and an ointment made from the bichloride of mercury.

Dr. Percival Hermann, of Kratzersville, says:

With us different portions of the year, owing largely to the invariable operation of peculiar influences, are always characterized by the greater prevalence of particular classes of disease. Thus, from about the middle of February until the same of April, cases of bronchitis, pleurisy, and pneumonia predominate. From the middle of July until the end of October, diarrhœa and dysentery are most common; and from the beginning of August until that of December, periodical fevers "hold the upper hand." The occurrence of an epidemic only reverses this order. A reference to my quarterly summaries of cases under treatment, at least, shows this to be a fact; and although, as above stated, it occurs mainly in consequence of the activity of widespread deleterious causes wholly uncontrollable by man, I am, nevertheless, constrained to believe that if we would take the necessary precautions—a work that could easily be done were it not for our indifference and ignorance—we could save ourselves from a large amount of sickness and suffering. Prevention of disease is of greater importance than the cure of it.

Humanity, I think, demands hygiene more than physic at the present day; and I hope that the day is not far distant when our legislators will not be guided by false economy, and create for us an efficient State Board of Health.

Scarlet fever during the last year again occurred quite extensively in my practice. A great many cases terminated fatally, and an unusual number suffered with the sequelæ of this disease. Intermittent fever was uncommonly prevalent in its season, and showed a marked tendency to recur.

On the 19th of April, 1881, M. S., age twenty-five, unmarried, farmer by occupation, good family history, and himself very hearty before this present trouble commenced, came to my office and complained of weakness, of pain being occasioned in teeth and jaws when drinking either warm or cold liquids. This latter symptom seemed to attract his attention more than anything else about his whole sickness. He was thin and pale, and upon further inquiry I ascertained that he had great thirst and passed an inordinate quantity of urine in twenty-four hours, and, making use of the fermentation test, I discovered it to contain sugar—about thirty-five grains to the ounce, sp. gr. 1050. By September 15th he passed only a normal quantity of urine, but of 1040 sp. gr. In the interval he had suffered from a large abscess of thigh posterior, and had taken ergot, creosote, strychnia, Fowler's solution, etc., at different times, with no other effect than the reduction of the quantity of urine passed. By the employment of an exclusive skim-milk diet all traces of sugar disappeared, but only to appear again upon the resumption of albuminous articles of food. In this way the disease stood obstinately like a stone wall. The case then drifted into the hands of a Lewisburg doctor with no better result. At present he is making use of a nostrum, only to despair in the end.

Dr. R. Rothrock contributes the following interesting case of

Triangular Deformity of the Female Pelvis. Embryotomy. Placenta retained 128 *hours.*

Every experienced physician must be aware of the imminent danger arising from a deformed state of the female pelvis, in the delivery of the forthcoming offspring. The danger to both mother and child is of such a character as to become very alarming to mother and attendants, and to physician, who have

persuaded themselves, either by their own experience or by the teachings of others, that nature has amply provided every female with the ability necessary for safe delivery. Believing, as I do, that it is the duty of every physician to report his cases that are of rare occurrence, or possess interest, for the brethren of his County Medical Society, or for the readers of medical journals, which are established for the mutual benefit of every physician, with your permission I will report the following case, which I think possesses an amount of interest worthy of reading, on account of the peculiar deformed state of the pelvis, and retained placenta.

August 3, 1881, at twelve o'clock at night, I was called to see Mrs. C., aged thirty years, in labor with her first child. She was of the bilious temperament, over medium size, and her physical powers indicated a durable constitution. I found the patient's tongue furrowed, of a brown color, with aching of the small of the back, and a muco-sanguineous discharge from the vagina, which had existed for twelve hours, without labor pains making their appearance. I gave some astringents, leaving orders, when labor pains came on, to inform me. Here permit me to digress from my subject, and preface a few facts that may be of much interest to my medical brethren, and give a clue to my case, that it may be more readily understood. In a conversation with the mother of Mrs. C. I learned the following highly interesting facts in regard to her family of daughters, five in number, at their first accouchements:

"My eldest daughter," said she, "at her confinement with her first child, labored excessively hard for four days and nights, and was delivered of a dead child, after which she was seized with puerperal fever and died. At the accouchement of another daughter with her first child her physician found it impossible to deliver without employing violence to either mother or child, or effect a delivery by some mechanical aids. The doctor, forcing the pubis toward the sacrum by a strong effort, succeeded in delivering her; but she was unable to stand on her feet for four months, and remains an invalid the residue of her days. The other daughters, at their first accouchement, had to be delivered by the employment of instruments, after every effort and means had been exhausted by the best physicians whose services could be obtained. It was done by perforating the cranium, discharging its contents, and forcing a delivery by

means of the blunt hook. One of them recovered her health, and gave birth to a number of children; the other died soon after from inflammation of the uterus or its contiguous parts." The above statement is from the old lady's lips in its most condensed form, omitting many interesting facts, lest I should be tedious. It is due to my subject to say that I endeavored to ascertain whether this deformity was hereditary or not. The mother informed me that she was delivered with as much ease as is common to women, and that she never knew anything of this kind visited upon any of her relations, or those of her husband; she informed me that all her girls in childhood were stout and hearty, with no symptoms of rickets or disease of the back or hips. After giving the above statement of facts, as related to me by a very intelligent lady, and mother of a large family of children, with an experience of sixty years, I leave the reader to solve the problem and draw his own conclusions, without comment on my part.

August 4th, at 5 A. M., I received a notice that Mrs. C. wished my immediate attention. I visited her, and proceeded to make an examination per vaginam, disclosing the following condition, which has been hinted at in the history of her four elder sisters, Mrs. C. being the youngest daughter of the family. Os uteri dilated to about the size of a fifty-cent piece; dilating with each pain more rapidly than is common for females with their first children. My attention was immediately directed to the deformed, triangular shape of the pelvic cavity. I will endeavor to describe this most wonderfully deformed state of the pelvis. The symphysis pubis protruded or arose up to a sharp point; the rami of the ischium arose from the sacrum with but very little curve in them, forming almost straight lines, and forming a crotch in place of the pubic arch; the hollow of the sacrum was almost entirely absent, forming a complete triangular square, with the exception of the sacral angle being about one-fourth shorter than the ischial angles. The bones of the pelvis were very firm and large. If any readers of this article wish to see a representation of this case, they can do so by placing the points of the index fingers together, holding them straight, and passing the thumbs past each other to the second joint, from which they can obtain a tolerably correct idea of this strange piece of malformation, through which had to pass a living or dead child, if ever delivered, which depended upon two circumstances:

the pelvic bones accommodating themselves to the shape of the fœtal head, or the head being of small size, and then being moulded into the shape of the pelvic cavity, it might pass through the malformed strait of the pelvis. 9 o'clock A. M.—Labor progressing, os uteri dilating, fœtus descending into the basin of the pelvis, amniotic sac forming, patient complains of nausea at the termination of each pain, pains occurring at regular intervals of fifteen minutes. I must say here, as regards the treatment of this case, and medicines used, they consisted of ergot, quinine, morphia and all other medicines as used and recommended by our best standard authors, in such proportion and compounds as the patient could bear, from the commencement to the termination, which, in my hands, had heretofore proved sufficient to dislodge the fœtal head after being locked in the pelvic cavity from twelve to eighteen hours. 12 o'clock M.—Os uteri dilated, amniotic membrane ruptured, vertex presenting at the pubic arch, bearing down pains, nausea, and vomiting of bilious matter. A potion of emetic drops evacuated the stomach of its contents, after which nausea ceased, the stomach became quiet, and received and retained kindly the above-mentioned medicines. 3 o'clock P. M.—Uterine contractions powerful, motions of the fœtus stronger and turbulent, descent of the head very tardy, medicine administered with more energy. 6 o'clock P. M.—Vertex resting against the pubic arch, each side of the fœtal head coming in contact with the ramus of the ischium, head locked in the pelvic cavity, no motion except that the most severe pains pressed the face farther into the hollow of the sacrum. 12 o'clock midnight.—I ascertained, by repeated examinations of the presenting parts, that the fœtal head was resting against each rami, and could not progress further for want of the necessary curve in them, so as to allow the head to pass. The uterine pains were amply sufficient to have forced the head through the passage under all ordinary circumstances where delivery was possible. The poor woman, being very much exhausted, began to despair of ever being delivered. Observing that the fœtal motions were almost imperceptible, and growing weaker rapidly, I began to suspect that the child must perish, and perhaps the mother with it.

August 5th, 5 o'clock A. M.—By this time all the facts so clearly presented themselves that doubt could not exist as to

the future. All signs of life in the fœtus were extinct, and had been for some time, while the patient's strength was giving way under her powerful labor. Not the most minute change had been observed to take place since three o'clock. I thought I had the most undoubted evidence that a delivery could not be effected without perforating the cranium, discharging its contents, and thereby lessening its diameter. So I informed the husband of the facts, and had counsel immediately called.

It is due to myself to say, that counsel of the best kind, and of my own selection, was soon at hand, a gentleman very liberal in his views upon medical science. I requested him to examine the case, after which he gave it as his opinion that *ergot* was the only probable chance for a delivery. It was very clear to my mind that ergot, the crotchet, or the forceps, must relieve the patient, or death would soon close the scene. At 6 o'clock A. M., Dr. W. commenced giving ergot, as the case seemed to indicate, and at 10 o'clock the uterine contractions became very powerful—almost frightful to witness—with no effect except to press the face farther into the hollow of the sacrum, and the head more firmly against the rami. 12 o'clock M., every hope of success had vanished. The fœtal head was completely obstructed in its passage; the most wonderful efforts could not move it. We determined to give ample time for Nature to accomplish her work. We watched the case until 2 o'clock P. M., when the uterus was in constant agitation, there was a wild expression of countenance, and symptoms of convulsions began to be manifest. With all this, which seemed as though the walls of the uterus and abdomen must give way, and allow the fœtus to escape through them, not moving the fœtal head a particle, we decided that the effects of ergot must be discontinued, or they would prove disastrous to the patient. Recourse was immediately had to morphia in sufficient doses to allay agitation. Embryotomy was the only hope left in our minds for saving the life of the mother. The child had not shown signs of life for ten hours or more. In order to accomplish this work, we must have implements to work with.

I will state, either for the honor or dishonor of the physicians of this section of Pennsylvania, that a set of obstetrical instruments could not at that time be found within twenty-five miles of the place. As "necessity is the mother of invention," and

cases of emergency tax men's genius, it may be of interest to state that our set of instruments consisted of a scalpel, a pair of long-handled scissors with short blades sharpened on the back for a crotchet, a blunt hook made by the gunsmith, and a curved tooth forceps for extracting the bones of the cranium. All necessary arrangements being made, the pains not having made their appearance since the giving of the opiate, we delayed the operation until 5 P. M., when the patient was adjusted on the bed, with the perineum over the edge, and her limbs supported. Dr. W. seated himself, and with the scalpel made an incision through the scalp of the fœtus two inches in length, through which he perforated the head, near the anterior fontanelle, with the temporary crotchet, breaking up the medullary substance as much as possible. We gave the patient some stimulants, with light nourishment, and let her rest, with a view that a portion of the contents of the cranium might be expressed, and to raise the pains or stimulate the uterus to contractions again. Efforts being made by myself to effect a delivery without the aid of the uterus, I found it impossible, when we determined to give more time, making use of all the medicines usually given under such circumstances, without any effect. Ergot was then given, but to no purpose, save that of vomiting; the stomach would retain it no more than it would lobelia.

9 o'clock P. M.—All attempts being baffled to produce uterine contractions, and decomposition of the fœtus having commenced, as was observed by the odor that escaped, it was evident that further delay would be hazardous to the life of the mother. Mrs. C. was adjusted on a lounge, her feet supported against the posts, when I seated myself and commenced the operation by introducing the hook into the cavity of the cranium, and extracting the medullary substance. After I had removed the most of the contents of the cranium, I made an effort to pass the vertex through the crotch of the pubis, which proved abortive. I found the bones of the skull so firmly united, from the inner and outer membranes, that I could not break them away. Removing the peri-cranium as much as possible, I removed the two parietal bones by twisting them off with the forceps. I then collapsed the lambdoidal suture, and, forcing the hook through the posterior fontanelle and integuments, guarding the point with my finger, I com-

menced gradual extraction. After exerting my entire strength, and collapsing the cranium one-third in diameter, I succeeded in passing the occiput through the arch of the pubis. Some stimulants were administered, and the patient allowed to rest ten minutes. Now came the most difficult part of the delivery, namely, dilatation of the vulva, which by this time had become very tender and rigid. I passed the hook in the side of the cranium, and fastened it opposite the orifice of the ear, and passed two fingers in and caught hold of the os frontis. By gradual and powerful extraction, I succeeded in dilating the vulva and delivering the head in about twenty minutes. In about ten minutes more I succeeded in delivering the body, requiring most of my strength to pass the shoulders through the malformed pelvis. As soon as justifiable, Dr. W. made an attempt to obtain the placenta. He made gentle traction on the umbilical cord, when it broke, leaving the placenta behind. As one strange phenomena after another has presented itself through the entire case, after the fœtus was extracted, the uterus remained as large as when in its gravid state.

Dr. W. passed his hand into the genital fissure, and after a minute examination, he found the placenta closely adhered to the fundus, and the only contraction of the uterus being of the hour-glass character. Believing, as we did, that without any contraction of the uterus to shut the mouths of blood-vessels, to detach the placenta by violence of the accoucheur's finger, would produce dangerous, if not fatal, hemorrhage of the womb, it was left for nature to dispose of it, offering whatever assistance we could at any time. The patient being cleansed as much as possible, and a bandage applied, she was by ten o'clock in bed resting quietly; received some wine and nourishment, and by twelve o'clock she was sleeping sweetly, free from pain and uneasiness, with the exception of a little fever. She was delivered of a large male child weighing ten pounds, of remarkable solidity of the bones, and a large frame, especially the head. It is due to Mrs. C. to say that during the whole of this severe trial she never murmured or complained, but manifested a courage and determination only paralleled by one of her sex placed in similar circumstances.

August 6th, A. M.—Saw the patient again. Uterus had contracted but very little, lochia scant, vulva swollen and tender, so much so as to give intense pain. Upon an examination per

vaginum, the placenta or secundines could not be touched with the finger; the patient was resting as well as could be expected under the circumstances. The necessary treatment was applied. Being under the care of a kind and attentive mother, nothing was left undone that could be done by physicians or nurse. I must say that the limits of this article will not permit me to give the case in detail, but a statement of the most prominent facts *only*.

August 7th, 6 o'clock.—Patient restless and feverish, a distress in the region of the uterus. I manipulated the abdomen with the dry hand for a considerable time, and grasping the fundus of the uterus, when a quantity of offensive coagulum and gas was expelled, after which the patient rested easy.

Through the course of the night following, the coagulum reaccumulated, when it resulted in a severe *rigor*. The expulsion of a large quantity of coagulum and gas again afforded relief for the time being. These tremors recurred once and sometimes twice in twenty-four hours, each symptom being met with the most prompt and energetic treatment, until August 9th, at 4 o'clock, A. M., when I was called to see the patient suffering from accumulated coagulum. I administered some emetic drops, with a view of expelling the coagulum, and peradventure the placenta with it, which had been the most effectual means of expelling the contents of the uterus yet employed in the case. At 5 o'clock, she made an effort to vomit, which expelled a quantity of coagulum, and with it the *placenta*. After this, the uterus seemed disposed to assume its normal condition. The patient being very weak and prostrated, a lingering fever made its appearance, which was treated according to indications, until August 25th, when Mrs. C. was convalescent, and on September 10th, she was able to accompany her mother home, some four or five miles distant.

ROSWELL ROTHROCK, M.D.,
Middleburg, Snyder Co., Pa.

The Chairman of the Committee reports the following case:

A case of synovitis of knee-joint to which I was called at night, August 28, 1881, in a young lady aged eighteen years, black hair, brown eyes, fair skin, well developed, rather above the normal for her age. Menstruation with all other functions perfectly normal. Family history relative to health very good.

Two days previously, while engaged in scrubbing the porch, she slipped and fell on her right knee. She felt a sharp pain in it for a time, but it soon left her. About 10 o'clock, P. M., on retiring, she found it almost impossible to raise her right limb from one step up on to another. There was a heavy pain during all that night, and in the morning she found the same trouble in coming down stairs, but after using her limb for a while, she was able to get along much better. At 8 A. M. she started on foot for Sabbath-school, a distance of three miles. While at school she took a very heavy chill, became powerless as well as insensible, was brought home in a conveyance, and rapidly grew worse. Her limb now pained very much, and was swelling rapidly. At about this time, 10 P. M., I saw her. Pain and swelling were most felt at inside of knee-joint, perhaps two inches above joint, and the swelling extended along the whole inside of limb. Pulse, 120; axillary temperature, 105° F.; tongue little coated. An anodyne mixture was given, containing in each dose tr. aconite one drop, tr. verat. virid. one drop, tr. gelsemii four drops, morph. sulph. one-eighth grain, Hoffman's anodyne fifteen drops, tr. valerian fifteen drops, aquæ thirty drops. This was given every hour until the temperature was reduced to 103° F. At the same time, two grains of quinine, with five grains of iron by hydrogen, were given once every three hours.

On the next day the inflamed limb measured three inches above the knee, thirty-one inches in circumference, and the sound one, at the same place, measured only eighteen inches. Tincture iodine was freely applied, and the limb covered with batting, as it was impossible to bandage it on account of the pain. In about three days the temperature was reduced to 103° F., and remained between 102° and 104° F. for twenty days. The limb during all this time remained about the same, with pain at times almost unbearable at inside of joint. I now asked for counsel, and Dr. B. F. Wagenseller, of Selinsgrove, was called. The exploring needle was introduced for about three inches, at seat of pain, and a small quantity of thin yellow fluid escaped. The pain now left inside of knee, and the swelling at that place partly subsided; but it now seemed to centre six inches above, on inside of leg, or a few inches below pubis. The pain at this place, in a few days, was even greater than at inside of knee-joint. Hot poultices of flaxseed

were kept on continually, day and night, for ten days. Then the exploring needle was introduced, and a free, deep incision made. Two quarts of pus and blood escaped in the first twelve hours. It was thus left to drain for five days. Afterwards it was syringed thrice daily, for twenty days, with a strong solution of carbolic acid; it then closed up, and has been well up to this time. In sixty days from date of injury the limb was healed.

Respectfully submitted by

H. H. BORDNER,
J. O. WAGNER,
Committee.

REPORT OF THE VENANGO COUNTY MEDICAL SOCIETY.

The county of Venango is divided by the Allegheny River, part of it lying east and part west of that stream. Franklin, the county seat, is eight hundred feet above tidewater, and seventy miles, on an air line, north of Pittsburgh. The highest point in the county is eleven hundred and eighty feet above tidewater at a place near Pleasantville. The climatic influences and local peculiarities are in general such as are common to the counties of western Pennsylvania, with the exception that it is more exempt from malaria than some of the adjacent counties. The streams consist of pure, clear, running water, and this, with the general conformation of the country, and its high elevation, constitutes an important factor in the average good health and longevity of its inhabitants. In agricultural interests Venango County does not take the foremost rank, more especially since the production of petroleum began to be an extensive business within her borders. The principal towns are Franklin, the county seat, Oil City and Emlenton, all situated on the Allegheny River. Other towns of some importance in the interior are Clintonville, Cooperstown, Waterloo, Utica, Pleasantville and Rouseville. Having received no report from either of these localities, the writer is unable to give any information in relation to prevailing diseases, or any other matters pertinent to this report. Franklin is pleasantly located at the confluence of French Creek and Allegheny River, and has a population of five thousand inhabitants. Its site is a gradual and easy slope, extending from the base of the surrounding hills to the banks of the two streams, thus forming a perfect water-shed, and affording the best natural conditions for thorough drainage. The city is supplied by means of water-mains with pure spring water obtained from the hills near by, thus conducing materially to its excellent sanitary condition. Since this supply was introduced (a period of eighteen years), there has been no epidemic of malignant disease in our

midst. There being no very important manufacturing interests in the vicinity, with the exception of two or three petroleum refineries, the surgical practice is not very large.

During the past year Franklin and the immediate region have experienced nothing beyond the usual diseases incident to the annual climatic changes. The zymotic diseases have not been malignant in their character. In the latter part of the summer, and during the autumn of 1881, a form of continued fever, of a well-marked malarial type, became endemic in the city, and in two or three cases which proved fatal assumed a typhoid type. The majority of the cases, however, did not manifest the distinctive symptoms by which the typhoid condition is known, and ran a course of six or eight weeks, requiring nothing more than expectant and tonic treatment, and usually very little stimulation, the convalescences being uncomplicated and easy.

Diphtheria has become a habitant of this region, and there is not a month in the year in which any practitioner will not have to record one or more cases, either in its mild or malignant form.

The medical society, which was established in 1867, has continued in successful operation ever since. Quarterly meetings are held, which are generally well attended, serve as very pleasant social reunions, and are a source of great professional encouragement to those who attend. Papers upon medical subjects are read, oral communications are made, and discussions follow, in which all participate. The majority of the regular physicians of the county are members of the society. There are a few, however, who have not availed themselves of the benefits and privileges thus enjoyed. During the past year death has taken from our midst three members of our Society,—Dr. B. Gillett, Dr. L. H. Christie and Dr. T. W. Sampson. Dr. Gillett had been for many years a resident of Franklin, was highly esteemed for his rare social qualities and uprightness of character. Courteous and polite as a citizen and neighbor, kind and faithful in his offices as a physician, he will be missed by his many friends and patrons and the community at large. Dr. Christie, also a citizen of Franklin, was cut down in the maturity of his manhood, at a time when his prospects were bright for a future of usefulness and distinction in the profession of his choice. Dr. Sampson, of Emlenton, had lived

to a good old age, and was genial and pleasant, and useful in his profession. The proper testimonials of appreciation and respect for two of the deceased, Drs. Gillett and Christie, and of sympathy and condolence with their immediate friends, were adopted, and engrossed in the minutes of the Society, and the same suitable recognition of the demise of Dr. Sampson will be given at the next meeting of the Society.

W. S. WELSH,
Chairman of the Committee.

Franklin, Pa.

REPORT OF THE WASHINGTON COUNTY MEDICAL SOCIETY.

Washington County is situated in the south-western part of the State. It is bounded on the north by Beaver and Allegheny, on the east by Allegheny, Westmoreland, and Fayette, on the south by Greene, and on the west by the State of West Virginia.

Washington County was formed into a county from a part of Westmoreland County, in 1781, being the twelfth county in the State. Its length is thirty-two miles, its width twenty-nine, and it contains about nine hundred square miles. It is in latitude 40 1-6° north. Its population is about fifty-one thousand, Our county presents a rolling character, and may be called hilly; but does not belong to the class called mountainous.

These hills and valleys are very productive, and for agricultural and grazing purposes are not inferior to any in the State. The undulating surface of the county presents scenery varied and picturesque. It is the champion sheep and wool-growing county in the grand old Keystone.

The rocks belong to the upper bituminous coal formations, consisting of strata of sandstone, shales and limestone. The coal-beds vary in thickness from three to nine feet. The veins crop out along the steep declivities near the streams, and are mined in large quantities for domestic consumption and for transportation.

The Monongahela River flows along the eastern border of the county, and affords the farmers, merchants, and coal operators in its vicinity a ready and easy access to Pittsburgh, and to the Southern and Western markets. The centre and the north-western parts of the county are well supplied with railroads.

The south-eastern part of the county is drained by Ten-mile Creek, which empties into the Monongahela River; the eastern part by a number of smaller streams which empty into the some river; the northern and the north-western part by the Chartiers and Cross creeks, which empty into the Ohio River; and the western and south-western part by the Buffalo and Wheeling creeks, which also empty into the Ohio River.

Our county is seldom visited by severe epidemics, by none of importance within the last year. Typhoid fever, however, prevailed to a considerable extent in some of the river districts. There were quite a large number of cases of pneumonia of a severe type in the south-western end.

Small-pox prevailed to a limited extent in Washington and along the Pan-Handle Railroad. Some of the physicians of the south side have encountered several cases of malignant erysipelas.

Our Society is in good working order, and its meetings are well attended. Papers on important cases or on subjects assigned by the President are read and discussed at each meeting.

Washington County is *blessed* with a sufficient number of *doctors*, there being one for every four hundred and fifty of her population, or one hundred and thirteen in all. Seventy-nine are graduates of regular schools, seven of eclectic and homœopathic schools, and there are twenty-seven individuals in the county practicing medicine who are not graduates of any school.

A Singular Case in Surgery.

Was called February 15, 1881, to see a lady aged forty-eight years, who had tripped and fallen on the porch the evening before. She was unable to arise, and was carried in and laid upon a lounge immediately. She complained of severe pain at about the middle of the outer anterior portion of the left thigh. The pain was greatly augmented by the least motion, even that produced by an individual walking across the room. The family thought she had sustained a fracture of the femur, but careful examination failed to reveal anything abnormal except the acute pain and loss of motion. There was no fracture, no dislocation, no contusion, no discoloration, and no swelling, but the manipulations for the purpose of ascertaining the cause of the terrible suffering revealed that tight squeezing or hard pressure over the seat of the pain relieved the patient. As I could discover nothing wrong except the pain, I applied a bandage tightly, and ordered the application of anodyne liniments. It was about fourteen months before she could walk, even with the aid of crutches. During that time the bandages were frequently removed, when the pain would return. She can now, May 1, 1882, walk with the assistance of a stout cane, but still wears the bandage, as the pain returns whenever it is removed.

Dr. J. B. Donaldson, of Cannonsburg, reports the following:

Through the kindness of my friend Dr. Barnett, I was permitted to be present at the *post mortem* removal and examination of a large goitre or bronchocele from the neck of a lady aged about eighty years. It had been noticeable for over sixty years, had developed during the last six years of her life very rapidly, and at the time of her death would measure fully eight inches in diameter; and the weight was so great as to interfere a great deal with her respiration, especially when in the recumbent position.

This affection, which commonly begins early in life, as far as we know consists in an abnormal development of the thyroid gland, and is supposed to be the result of a preternatural supply of blood. Most authors admit that it is extremely problematical just what does produce this disease. Some have attributed it to drinking snow-water, as it is apt to be prevalent in mountainous regions, and at the base of mountains. Gross says, "It is possible that it may depend upon inflammatory irritation;" but if this be true, it can hardly be supposed that this action would continue through a period of sixty years.

If such tumors be examined in their early stages, it will be found that, while the tissues are unnaturally red, firm and distinct, and that while the thyroid arteries which supply them with blood are unnaturally voluminous, there is no evidence whatever of plastic deposits, justifying the belief that inflammation had any agency in the production of the changes.

In this case, but little change had taken place until within the last six years, if I remember aright, at which time it began to enlarge, and gave evidence of containing fluid. It was removed after death, at the request of the family, in order that the corpse could be the more easily coffined.

We made our dissection not any too carefully, but were much struck with Professor Gross's remarks on the subject, "that he did not envy any man his feelings after he got under way in making an attempt to remove these tumors during life." The tumor was removed, and was almost completely round; it weighed seven pounds and three-quarters. The walls were quite thin, and it seems remarkable to me that they did not break down at some point. But the contents are what appeared to me as most remarkable. If I gave it a thought at all, I would have supposed it would be a serous or perhaps a coffee-colored

fluid, such as we find in most dropsical effusions; but when the tumor was punctured, it proved to be perfectly white. It looked like a good article of whitewash, and had no smell.

The walls of the tumor were covered, almost all over, with calcareous deposits, some of which I tested with acid, and they gave unmistakable evidence of being lime.

Taking into consideration the size of the tumor, quality of fluid, and the length of time that it was carried about, it seems to me a rather peculiar case.

The contents of the tumor were examined by members of our County Society, who pronounced it lime and soda.

Dr. THOMAS MCKENNAN, of Washington, reports as follows:

There has not been any epidemic of importance during the year, within the bounds of my practice, except the short epidemic of small-pox in our town during the past winter.

There were six cases of variola and about the same number of varioloid. The mortality, three (3) cases of variola. The first two cases of variola were contracted in Pittsburgh, and the infection spread within fifteen to twenty days to all the others.

In only one house was there more than one case, and in this house but two (2),—one variola, the other varioloid.

Careful separation was required, vaccination and re-vaccination extensively performed, and the disease was soon arrested.

I desire to bear my testimony to the efficiency of salicylic acid and its salts in acute and sub-acute rheumatism. The acid is perhaps more efficient than its salts, but on account of distress in the stomach produced therewith I have lately used the salts alone. The salicylate of cinchonidia in combination with alkalies and Dover's powder has shown in my hands a most marked influence in relieving and arresting both these forms of rheumatism.

During the year I have had two (2) ovariotomy operations. One (1) successful, the other unsuccessful. The first, Mrs. B. aged 53 years, was operated upon October 4, 1881. Left ovary involved; attachments both in front and behind considerable, but easily broken up; pedicle broad and tolerably short, Atlee's clamp was used; cyst unilocular, and weighed with its contents fifty-five pounds. This patient recovered without a bad symptom, her temperature never rising above $101\frac{1}{2}^{\circ}$ F.

The second case, that of a young, plethoric and vigorous woman, aged 24 years, was performed November 10, 1881.

The prognosis in this case, on account of abdominal adhesions, with great tenderness, had been unfavorable, and it was only undertaken because of her sufferings and *her urgent request* to have the operation performed.

The adhesions proved, as I feared, formidable, and the inflammatory tendency great. She died in four days from peritonitis.

The hemorrhage was great, and a drainage tube was inserted. On account of the short and thick pedicle, it was tied with double ligature and dropped in.

In both cases strict antiseptic measures, spray, dressing, etc., were complied with.

Having seen within the past few years two cases of death from peritonitis after careful tapping of the cysts, although the diagnosis was clear, and the *post mortem* showed them to have been cases with nothing to have prevented successful operations, I refused positively, in the two cases under consideration, as the diagnosis was clear, to either tap or aspirate.

J. A. PATTERSON,
Chairman Com.

REPORT OF THE YORK COUNTY MEDICAL SOCIETY.

The Society as usual held its regular monthly meetings, and all of them were generally pleasant, interesting and instructive; the monthly attendance of members was more than a fair average; these periodical social enjoyments are largely due to the activity and punctuality of our excellent secretary, Samuel J. Rouse, M. D., who has served us faithfully for many years, and is always at his post of duty. During the year there was an increase of four new members and one restored to membership, and two removed by death. There are still a few outsiders who should come and meet with us—if they would only cast aside some foolish notions of self-importance, and be willing to humble themselves to abide by the established rules of true medical ethics, and the propriety and congeniality of a well-organized and useful society.

As the prevailing diseases during the year, I especially name measles, scarlatina, whooping cough, rheumatism, and sporadic cases of diphtheria and small-pox. In the treatment of whooping cough, I discovered no specific, having tried many remedies so recommended; but the disease would generally run the usual time, and often much longer when complicated with other diseases.

A number of valuable papers were read on different subjects, and many verbal reports of cases were made, which were freely discussed; only a few of the papers that were read, have come into my possession, from which I pen the following short extracts.

On the *Oxytocic Action of Cinchona*, by Dr. J. Deisinger, of Hellam.

The doctor reports two cases of typho-malarial fever which came under his notice.

Case I.—"A young woman, about sixteen years of age, pregnant six months; about 20 grains of cinchonidia was prescribed,

in divided doses to be taken during the night, and about five o'clock next morning, a fœtus of about six months was expelled."

Case II.—"Patient pregnant about six months, quinine or cinchonidia was administered, and abortion also took place during the course of her sickness."

The doctor says: "Neither of these cases prove that quinine or cinchonidia are oxytocic, but furnish strong presumptive evidence that such might be the case."

Scarlatina, by Dr. A. J. Snively, of Hanover.

The doctor reports quite a number of cases of the malignant type, in which the treatment might easily be termed of a heroic character, and generally was successful. He says: "We must admit there are many, very many dark points in the management of this formidable and sometimes loathsome disease," and concludes his paper with "my general plan of treatment in this disease has been expectant; though being fully impressed with the most heroic measures in the more malignant type. It is only recently that I fully realized how much can be accomplished by strict sanitary and prophylactic measures; my experience in some twenty families has fully convinced me that we can frequently stay and altogether prevent this disease by the co-operative labor of parents."

Dr. James W. Kerr, of York, reports a case of hydronephrosis.

We are called upon to announce the death of two of our esteemed members during the past year.

JAMES M. SHEARER, M. D. 1833–1881.

Dr. Shearer died at his residence in Dillsburg, York County, December 14, 1881, in the forty-eighth year of his age.

He was graduated from Dickinson College, Carlisle, in 1853, and was a graduate of the Pennsylvania Medical College in 1858, and immediately thereafter began the practice of medicine in Dillsburg, in connection with his father, the late Dr. George L. Shearer. Very soon after the outbreak of the late civil war, the doctor entered the service of the United States, serving in the capacity of assistant surgeon, and surgeon, with distinction and credit to himself in the various field and hospital duties to which he was assigned. In 1866 he returned to Dillsburg, and again resumed the practice of medicine, in which he was actively and successfully engaged until about two years ago, when sickness overtook him, from which he lingered and suffered until relieved by death.

Dr. Shearer was a man of more than ordinary talents and

attainments, possessing a well-balanced mind, enriched with useful practical and scientific knowledge, acquired through years of research, study, observation and untiring diligence; these were brought to bear in the pursuit of his profession, and rendered him a skillful and scientific practitioner in the healing art. He was at the same time a man of kind heart, of generous impulses, and an earnest advocate of the right, and ever ready to relieve suffering, in whatever form it came under his observation. He was beloved and esteemed in professional and social relationship.

THOMAS L. CATHCART, M. D. 1807–1881.

Dr. Cathcart was born July 18, 1807, and died October 28, 1881. He graduated from Dickinson College, Carlisle, at the early age of nineteen years, and was graduated from Jefferson Medical College, Philadelphia, in the spring of 1830. He successfully practiced his profession in New Bloomfield, Perry County; Dillsburg, York County; Shepherdstown, Cumberland County,—altogether for a period of about twenty years. He then engaged in other pursuits in this county, and also at one time held a position for several years in the Treasury Department at Washington.

In October, 1865, the doctor married Miss Lucy, daughter of the late Judge Durkee, with whom he lived happily. She died in February, 1878, when he returned to York, where he has continued to reside up to his death.

The doctor's sickness was long and severe, but he bore it all with wonderful patience and great fortitude; and after lingering through many days and nights, amidst the hopes and fears and solicitude of loving hearts and tried friends, he gradually sank into the deep sleep of death. In all the relations of life which he sustained as a husband, friend, and citizen, he performed all these duties in a true spirit of loving-kindness and friendship; and we are now called upon to express our sorrow and to pay tribute to the worth and memory of our deceased brother, who, ripe for the harvest, has been garnered from his earthly field by

> "That reaper whose name is Death,
> And who with sickle keen
> Reaps the bearded grain at a breath."

Our deceased brothers were close friends and associates. Their memories and faithful companionship, their entertaining conversation, their professional integrity and high sense of honor, will long be remembered and cherished by those who enjoyed their society, and who knew them best and longest. This tribute of affection is offered as a memorial of everlasting friendship.

WILLIAM S. ROLAND.

York, Pa., April 24, 1882.

PRESIDENTS AND PERMANENT MEMBERS OF THE STATE SOCIETY.

OFFICERS AND MEMBERS OF COUNTY SOCIETIES,

AND

ALPHABETICAL LIST OF MEMBERS OF COUNTY SOCIETIES WITH THEIR POST-OFFICE ADDRESS.

PRESIDENTS OF THE SOCIETY.

1848.	
*Samuel Humes, M. D.,	Lancaster County
1849.	
*Prof. Samuel Jackson, M. D.,	Philadelphia County.
1850.	
*Wilmer Worthington, M. D.,	Chester County.
1851.	
*Charles Innis, M. D.,	Northampton County.
1852.	
Hiram Corson, M. D.,	Montgomery County.
1853.	
*John P. Hiester, M. D.,	Berks County.
1854.	
Jacob M. Gemmill, M. D.,	Huntingdon County.
1855.	
*James S. Carpenter, M. D.,	Schuylkill County.
1856.	
*R. La Roche, M. D.,	Philadelphia County.
1857.	
John L. Atlee, M. D.,	Lancaster County.
1858.	
*Smith Cunningham, M. D.,	Beaver County.
1859.	
*D. Francis Condie, M. D.,	Philadelphia County.
1860 and 1861.	
*Edward Wallace, M. D.,	Berks County.
1862.	
Geo. F. Horton, M. D.,	Bradford County.
1863.	
*Wilson Jewell, M. D.,	Philadelphia County.

* Denotes deceased.

1864.	
J. D. Ross, M. D.,	Blair County.
1865.	
Wm. Anderson, M. D.,	Indiana County.
1866.	
*James King, M. D.,	Allegheny County.
1867.	
Traill Green, M. D.,	Northampton County.
1868.	
John Curwen, M. D.,	Dauphin County.
1869.	
*Wm. M. Wallace, M. D.,	Erie County.
1870.	
Samuel D. Gross, M. D.,	Philadelphia County.
1871.	
*J. S. Crawford, M. D.,	Lycoming County.
1872.	
A. M. Pollock, M. D.,	Allegheny County.
1873.	
S. B. Kieffer, M. D.,	Cumberland County.
1874.	
*Washington L. Atlee, M. D.,	Philadelphia County.
1875.	
Crawford Irwin, M. D.,	Blair County.
1876.	
Robert B. Mowry, M. D.,	Allegheny County.
1877.	
D. Hayes Agnew, M. D.,	Philadelphia County.
1878.	
J. L. Stewart, M. D.,	Erie County.
1879.	
Andrew Nebinger, M. D.,	Philadelphia County.
1880.	
John T. Carpenter, M. D.,	Schuylkill County.
1881.	
Jacob L. Ziegler, M. D.,	Lancaster County.
1882.	
William Varian, M. D.,	Crawford County.

PERMANENT MEMBERS.

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Agnew, D. Hayes	Philadelphia,	Philadelphia,	1870
Ainey, David C.	New Milford,	Susquehanna,	1874
Albright, F. G.	Lancaster,	Lancaster,	1874
Alexander, H. M.	Marietta,	Lancaster,	1881
Alexander, J. F.	Centre Hall,	Centre,	1881
Alexander, J. W.	Canonsburg,	Washington,	1877
Alleman, Horace	Hanover,	York,	1880
Allen, E. P.	Athens,	Bradford,	1863
Allen, John M.	Chester,	Delaware,	1870
Allis, Oscar H.	Philadelphia,	Philadelphia,	1874
Allison, T. H.	Kittanning,	Armstrong,	1880
Allison, T. M.	"	"	1876
Alter, M. H.	"	"	1881
Amick, J. H. B.	Schuylkill Haven,	Schuylkill,	1880
Ammerman, Alonzo	Danville,	Montour,	1877
Anawalt, J. W.	Greensburg,	Westmoreland,	1867
Anderson, Joseph W.	Ardmore,	Montgomery,	1872
Anderson, William	Indiana,	Indiana,	1862
Andrews, Thos. H.	Philadelphia,	Philadelphia,	1876
Arney, G. F.	Altoona,	Blair,	1880
Arnholt, M. A.	Pittsburg,	Allegheny,	1873
Asdale, W. J.	"	"	1868
Ash, H. St. Clair	Philadelphia,	Philadelphia,	1862
Ashhurst, John, Jr.	"	"	1881
Ashhurst, Samuel	"	"	1876
Ashmead, William	Germantown,	"	1863
Atkinson, William B.	Philadelphia,	"	1862
Atlee, John L.	Lancaster,	Lancaster,	1868
Atlee, John L., Jr.	"	"	1881
Bacon, Daniel	Wellsboro',	Tioga,	1872
Bacon, M. L.	"	"	1879
Bailey, Wm. D.	Dillsburg,	York,	1873
Baker, A. R.	Duke Centre,	McKean,	1882
Baker, Frances N.	Media,	Delaware,	1881
Baker, Washington H.	Philadelphia,	Philadelphia,	1879
Baker, W. A.	Hydetown,	Crawford,	1882
Baldwin, L. K.	Philadelphia,	Philadelphia,	1871
Balmer, A. F.	Brookville,	Jefferson	1879

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Bardwell, E. O.	Emporium,	Cameron,	1882
Barr, D. M.	Philadelphia,	Philadelphia,	1875
Barr, G. W.	Titusville,	Crawford,	1867
Barr, Robert	Indiana,	Indiana,	1867
Bartholomew, H. L.	Warren,	Warren,	1882
Bartleson, S. P.	Clifton Heights,	Delaware,	1879
Barton, A. A.	Plains,	Luzerne,	1881
Barton, J. M.	Philadelphia,	Philadelphia,	1878
Batten, John M.	Pittsburg,	Allegheny,	1876
Baxter, Henry F.	Philadelphia,	Philadelphia,	1876
Bean, Geo. W.	Bainbridge,	Lancaster,	1878
Beane, W. H.	Middletown,	Dauphin,	1879
Beaver, D. R.	Conshohocken,	Montgomery,	1875
Beck, J. N.	Sligo,	Clarion,	1877
Bell, S. D.	Barnhart's Mill,	Butler,	1876
Bennett, Alice	Norristown,	Montgomery,	1881
Benton, S. H.	Oil City,	Venango,	1876
Berlin, J. O.	Chapman Quarries,	Northampton,	1881
Berntheizel, G. W.	Columbia,	Lancaster,	1877
Bertolet, Edwin B.	Oley,	Berks,	1879
Best, David	Meadville,	Crawford,	1868
Biddle, J. C.	Shenandoah,	Schuylkill,	1878
Bidlack, J. B. W.	Philadelphia,	Philadelphia,	1881
Birch, T. J.	Port Carbon,	Schuylkill,	1879
Birdsall, Samuel	Susquehanna De't,	Susquehanna,	1869
Bishop, H. M.	Sharon,	Mercer,	1880
Bishop, H. T.	Harrisburg,	Dauphin,	1881
Bishop, W. F.	"	"	1882
Blachley, O. L.	Sparta,	Washington,	1879
Blachley, S. L.	"	"	1868
Black, H. M.	Strasburg,	Lancaster,	1880
Blackwood, Wm.	Lancaster,	"	1877
Blackwood, W. R. D.	Philadelphia,	Philadelphia,	1875
Blaine, J. E.	Pleasantville,	Venango,	1882
Blair, A. R.	York,	York,	1879
Blair, J. M.	Fleming,	Centre,	1878
Blakeslee, W. R.	Harford,	Susquehanna,	1876
Bland, D. W.	Pottsville,	Schuylkill,	1870
Bloom, H. C.	Martinsburg,	Blair,	1879
Boal, G. Y.	Baden,	Beaver,	1876
Bockius, S. A.	Columbia,	Lancaster,	1881
Boker, Charles S.	Philadelphia,	Philadelphia,	1865
Bolenius, Robt. M.	Lancaster,	Lancaster,	1881
Bonebreak, D. W.	Martinsburg,	Blair,	1866
Bonsteel, A. S.	Corry,	Erie,	1878
Bottum, A. L.	Westfield,	Tioga,	1881
Bowman, J. D.	Harrisburg,	Dauphin,	1876
Bowman, J. F.	Millersburg,	"	1878

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Boyles, R. M.	Reynoldsville,	Jefferson,	1878
Bradford, T. Hewson	Philadelphia,	Philadelphia,	1880
Bradley, Chas.	Norristown,	Montgomery,	1876
Brady, S. H.	Lost Creek,	Schuylkill,	1880
Brandes, C.	Erie,	Erie,	1869
Brandt, E. B.	Mechanicsburg,	Cumberland,	1867
Brehm, Samuel H.	Newville,	"	1873
Brehman, G. E.	Altoona,	Blair,	1878
Breinig, P. B.	Bethlehem,	Northampton,	1874
Brendle, Geo. F.	Mahanoy City,	Schuylkill,	1874
Brobst, J. C.	Litiz,	Lancaster,	1881
Brooke, John B.	Reading,	Berks,	1877
Brooks, F. V.	Breakneck,	Butler,	1882
Brown, Geo. W.	Port Carbon,	Schuylkill,	1867
Brown, James M.	McVeytown,	Mifflin,	1880
Brown, R. B.	Summerville,	Jefferson,	1878
Brubaker, A. S.	Akron,	Lancaster,	1881
Bruce, Geo. D.	Pittsburg,	Allegheny,	1870
Bruen, Edw. T.	Philadelphia,	Philadelphia,	1879
Brumbaugh, A. B.	Huntingdon,	Huntingdon,	1873
Brundage, A. T.	Factoryville,	Wyoming,	1873
Bruner, Daniel J.	Columbia,	Lancaster,	1873
Buck, Frederick J.	Philadelphia,	Philadelphia,	1872
Buck, W. Penn	"	"	1880
Buckby, Wilson	"	"	1875
Bulkeley, J. E.	Wilkesbarre,	Luzerne,	1871
Burchfield, J. P.	Clearfield,	Clearfield,	1874
Burns, Robert	Frankford,	Philadelphia,	1863
Burr, Chas.	Scranton,	Lackawanna,	1875
Burroughs, J. L.	Sugar Grove,	Warren,	1882
Bushong, Israel	New Holland,	Lancaster,	1875
Buzzard, John	Bangor,	Northampton,	1880
Byers, John E.	Butler,	Butler,	1880
Cadwalader, C. E.	Philadelphia,	Philadelphia,	1882
Calvin, D. M.	Meadville,	Crawford,	1868
Cambridge, C. H.	Bellefonte,	Centre,	1880
Campbell, R. H.	Lewistown,	Mifflin,	1881
Carpenter, Henry	Lancaster,	Lancaster,	1865
Carpenter, John T.	Pottsville,	Schuylkill,	1866
Carr, A. P.	St. Clair,	"	1877
Case, A. G.	Pittsburg,	Allegheny,	1878
Chestown, A. V.	"	"	1873
Chestnut, J. H. W.	Philadelphia,	Philadelphia,	1876
Chrisman, R. S.	Pottsville,	Schuylkill,	1875
Christie, J. H.	Allegheny,	Allegheny,	1880
Christie, L. H.	Franklin,	Venango,	1880
Christy, J. C.	Pittsburg,	Allegheny,	1878
Christy, J. L.	Conoquonessing,	Butler,	1880

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Christy, R. W.	Sabbath Rest,	Butler,	1880
Chritzman, Henry G.	Welch Run,	Franklin,	1879
Cisna, W. R.	Ickesburg	Perry,	1868
Clagett, L. S.	Blairsville,	Indiana,	1878
Clark, A. T.	Greenville,	Mercer,	1871
Clark, G. L.	Centreville,	Crawford,	1882
Clark, L. S.	Philadelphia,	Philadelphia,	1876
Clark, R. W.	Dunbar,	Fayette,	1881
Clark, Wm. N.	Whitestown,	Butler,	1879
Clarke, Rowan	Tyrone,	Blair,	1864
Claudy, J. C.	Newville,	Cumberland,	1869
Cleaver, Israel	Reading,	Berks,	1873
Cleaves, Margaret A.	Harrisburg,	Dauphin,	1881
Cleemann, Richard A.	Philadelphia,	Philadelphia,	1879
Closson, C. H.	Altoona,	Blair,	1879
Coblentz, Joseph	Reading,	Berks,	1872
Cohen, J. Solis	Philadelphia,	Philadelphia,	1876
Colt, S. F.	Laporte,	Sullivan,	1882
Cole, W. W.	Allegheny,	Allegheny,	1878
Compton, Wm.	Lancaster,	Lancaster,	1868
Conners, W. F.	Duke Centre,	McKean,	1882
Coope, A. F.	Oil City,	Venango,	1882
Cooper, A. M.	Point Pleasant,	Bucks,	1881
Coover, D. H.	Harrisburg,	Dauphin,	1875
Coover, Eli H.	"	"	1876
Corson, E. M.	Norristown,	Montgomery,	1876
Corson, Hiram	Conshohocken,	"	1862
Corson, Wm.	Norristown,	"	1870
Corss, Frederick	Kingston,	Luzerne,	1869
Cottrell, J. F.	Columbia,	Lancaster,	1881
Cowan, Frank	Greensburg,	Westmoreland,	1873
Cox, Andrew P.	Big Run,	Jefferson,	1880
Cox, Thos. B.	Lancaster,	Lancaster,	1881
Craig, Alex.	Columbia,	Lancaster,	1869
Craig, Stephen A.	Freedom,	Beaver,	1879
Crandall, G. D.	Blossburg,	Tioga,	1877
Crawford, J. B.	Wilkesbarre,	Luzerne,	1867
Crawford, J. L.	Greensburg,	Westmoreland,	1881
Crawford, Robert,	Cooperstown,	Venango,	1868
Cressler, John M.	Mountain Top,	"	1876
Cresswell, John	New Bethlehem,	Clarion,	1875
Cristler, J. H.	Stoneboro',	Mercer,	1875
Cruice, Robert B.	Philadelphia,	Philadelphia,	1879
Cruice, Wm. R.	"	"	1881
Cunningham, J. G.	Kittanning,	Armstrong,	1881
Curtin, Roland G.	Philadelphia,	Philadelphia,	1881
Curtis, Levi	"	"	1862
Curwen, Jno.	Warren,	Warren,	1866

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Dale, J. Y.	Lemont,	Centre,	1877
Dale, Wm. W.	Carlisle,	Cumberland,	1868
Daly, Wm. H.	Pittsburg,	Allegheny,	1871
Darling, Lewis, Jr.	Lawrenceville,	Tioga,	1875
Davis, F. F.	Oil City,	Venango,	1870
Davis, Jesse H.	Landersburg,	Lancaster,	1881
Davis, Miles L.	Millersville,	"	1874
Davis, R.	Wilkesbarre,	Luzerne,	1874
Davis, Samuel T.	Lancaster,	Lancaster,	1869
Dayton, S. W.	Great Bend,	Susquehanna,	1871
Deakyne, A. C.	Philadelphia,	Philadelphia,	1882
Deaver, J. M.	Black,	Lancaster,	1881
Deisinger, J.	Hellam,	York,	1881
Detwiler, B. H.	Williamsport,	Lycoming,	1865
Dewey, E. H.	Meadville,	Crawford.	1882
Dickeson, W. T. W.	Media,	Delaware,	1863
Dickson, J. S.	Pittsburg,	Allegheny,	1882
Donaldson, J. B.	Canonsburg,	Westmoreland,	1877
Dorworth, E. S.	Bellefonte,	Centre,	1880
Doughty, Wm. E.	Hartsville,	Bucks,	1881
Drake, H. H.	Norristown,	Montgomery,	1879
Drysdale, Thomas M.	Philadelphia,	Philadelphia,	1864
Duhring, Louis A.	"	"	1877
Duncan, W. S.	Brownsville,	Fayette,	1869
Dundor, A. B.	Reading,	Berks,	1872
Dunglison, Richard J.	Philadelphia,	Philadelphia,	1867
Dunigan, M. C.	Erie,	Erie,	1882
Dunlay, J. Francis	Manheim,	Lancaster,	1876
Dunmire, Geo. B.	Philadelphia,	Philadelphia,	1874
Dunn, J. C.	Pittsburg,	Allegheny,	1875
Dunott, Thos. J.	Harrisburg,	Dauphin,	1881
Dusenbery, C. S.	Le Raysville,	Bradford,	1875
Dwight, M. B.	Jersey Shore,	Lycoming,	1876
Dyer, Ezra	Pittsburg,	Allegheny,	1882
Easton, Andrew	Allegheny,	Allegheny,	1876
Eby, James B.	Newport,	Perry,	1873
Egbert, T. W.	Oil City,	Venango,	1869
Ehler, J. Aug.	Lancaster,	Lancaster,	1864
Eisenberg, P. Y.	Norristown,	Montgomery,	1874
Eisaman, C. D. B.	Adamsburg,	Westmoreland,	1875
Elderdice, R. B.	McKnightstown,	Adams,	1877
Ellenberger, J. W.	Harrisburg,	Dauphin,	1881
Elliott, J. C.	Bradford,	McKean,	1881
Ely, Albert E.	Shellsburg,	Bedford,	1878
Emmerling, C.	Pittsburg,	Allegheny,	1878
Emory, B. A.	Dunningville,	Washington,	1881
Engelman, David	Easton,	Northampton,	1876
Engelman, J. P.	Cherryville,	"	1876

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Eppley, G. W.	Marysville,	Perry,	1880
Erdman, J. Dallas	Macungie,	Lehigh,	1875
Erdman, W. B.	"	"	1865
Eshleman, I. S.	Philadelphia,	Philadelphia,	1872
Evans, Horace Y.	"	"	1871
Evans, W. C.	Erie,	Erie,	1882
Evans, Isaac Newton	Hatborough,	Montgomery,	1862
Evans, Jos. R.	Bloomsburg,	Columbia,	1881
Evans, T. R.	Pittsburg,	Allegheny,	1879
Ewing, J. B.	Uniontown,	Fayette,	1878
Ewing, R. B.	West Grove,	Chester,	1879
Farquhar, Q. C.	East Bethlehem,	Washington,	1882
Fay, John	Altoona,	Blair,	1870
Feicht, Benjamin	Economy,	Beaver,	1868
Fenton, Thos. H.	Philadelphia,	Philadelphia,	1880
Findley, Wm. M.	Altoona,	Blair,	1870
Findley, Wm. R.	"	"	1881
Fisher, P. S.	Zion,	Centre,	1882
Fisk, A. J.	Tioga,	Tioga,	1878
Fitzgerald, J. M.	Lamartine,	Clarion,	1875
Fleming, Andrew	Pittsburg,	Allegheny,	1878
Floyd, John B.	Belleville,	Mifflin,	1880
Forbes, W. S.	Philadelphia,	Philadelphia,	1881
Foster, Wm.	St. Petersburg,	Clarion,	1880
Foster, W. S.	Pittsburg,	Allegheny,	1868
Foulke, Joseph	Buckingham,	Bucks,	1864
Foust, J. W.	Reynoldsville,	Jefferson,	1880
French, Morris Stroud	Philadelphia,	Philadelphia,	1880
Frey, Levi	York,	York,	1879
Frické, Albert	Philadelphia,	Philadelphia,	1862
Frick, Wm. S.	"	"	1873
Fritchey, John A.	Harrisburg,	Dauphin,	1881
Fulton, T. H.	Sandy Lake,	Mercer,	1874
Fulton, James	New London,	Chester,	1875
Fussell, Linnæus	Media,	Delaware,	1875
Gable, J. C.	York,	York,	1881
Gaddis, L. S.	Uniontown,	Fayette,	1878
Gallaher, T. J.	Pittsburg,	Allegheny,	1865
Gardner, B. F.	Bloomsburg,	Columbia,	1880
Geibner, E. X.	Sandy Lake,	Mercer,	1872
Gemmill, J. M., Jr.	Tyrone,	Blair,	1874
Gerhard, J. Z.	Harrisburg,	Dauphin,	1873
Gibbs, L. H.	Scranton,	Lackawanna,	1880
Gillaud, J. C.	Greencastle,	Franklin,	1880
Gilliford, R. H.	Allegheny,	Allegheny,	1880
Girvin, Robt. M.	Philadelphia,	Philadelphia,	1880
Glenn, J. P.	Snow Shoe,	Centre,	1876
Goodell, Wm.	Philadelphia,	Philadelphia,	1870

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Gorgas, S. R.	Harrisburg,	Dauphin,	1877
Graham, Sam'l	Butler,	Butler,	1875
Green, Geo. D.	Linwood,	Delaware,	1879
Green, Traill	Easton,	Northampton,	1863
Griffith, D. S.	Bedford,	Bedford,	1877
Griswold, E.	Sharon,	Mercer,	1873
Groff, G. G.	Lewisburg,	Union,	1882
Gross, Samuel D.	Philadelphia,	Philadelphia,	1862
Gross, Samuel W.	"	"	1877
Groves, A. F.	Bradford,	McKean,	1882
Grove, George	Springfield,	Cumberland,	1868
Gulden, B. C.	Minersville,	Schuylkill,	1876
Halbauer, T. K.	St. Clair,	"	1876
Halberstadt, A. H.	Pottsville,	"	1866
Halberstadt, Geo. H.	"	"	1881
Hall, J. E.	Parker,	Armstrong,	1882
Hall, A. D.	Philadelphia,	Philadelphia,	1876
Hall, L. Brewer	"	"	1879
Halsey, Calvin C.	Montrose,	Susquehanna,	1862
Hamilton, George	Philadelphia,	Philadelphia,	1862
Hamilton, Hugh	Harrisburg,	Dauphin,	1874
Harder, C. S.	Rohrsburg,	Columbia,	1876
Harper, D.	Karns City,	Butler,	1882
Harris, Geo. F.	Bellefonte,	Centre,	1878
Harshberger, A.	Milroy,	Mifflin,	1874
Harshberger, A. S.	"	"	1875
Hartman, Paul A.	Harrisburg,	Dauphin,	1875
Hartman, W. B.	St. Mary,	Elk,	1882
Harvey, Ellwood	Chester,	Delaware,	1862
Hassler, Jas. P.	Cochranton,	Crawford,	1871
Hatfield, Nathan	Philadelphia,	Philadelphia,	1869
Hatfield, N. L.	"	"	1862
Hay, Jacob	York,	York,	1877
Hay, John W.	Harrisburg,	Dauphin,	1873
Hay, Thomas	Philadelphia,	Philadelphia,	1866
Hayes, D. D.	Shippensburg,	Cumberland,	1873
Hayes, D. S.	Hollidaysburg,	Blair,	1871
Hayes, Thos. R.	Bellefonte,	Centre,	1877
Hearn, Joseph	Philadelphia,	Philadelphia,	1880
Hearn, Jos.	"	"	1882
Heilman, Salem	Sharon,	Mercer,	1874
Hellyer, Edwin	Philadelphia,	Philadelphia,	1862
Helsby, Thos. H.	Williamsport,	Lycoming,	1869
Hengst, D. A.	Pittsburg,	Allegheny,	1878
Henlen, B. A.	North Hope,	Butler,	1882
Henry, Frederick P.	Philadelphia,	Philadelphia,	1879
Herbst, H. H.	Reading,	Berks,	1882
Herbst, Wm. B.	Trexlertown,	Lehigh,	1866

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Herman, A. J.	Carlisle,	Cumberland,	1872
Hermany, P.	Mahanoy City,	Schuylkill,	1874
Herr, Ambrose J.	Lancaster,	Lancaster,	1876
Herr, Benj. F.	Millersville,	"	1881
Herr, Martin L.	Lancaster,	"	1872
Herron, Wm. M.	Allegheny,	Allegheny,	1876
Hershey, E. R.	Paradise,	Lancaster,	1881
Hertz, J. K.	Litiz,	"	1875
Hewson, Addinell	Philadelphia,	Philadelphia,	1880
Hibler, Augustus	Bellefonte,	Centre,	1876
Hickman, Napoleon	Philadelphia,	Philadelphia,	1879
Hilliard, G. W.	Richardsville,	Jefferson,	1880
Hillier, J. W.	West Middlesex,	Mercer,	1878
Hinkle, A. G. B.	Philadelphia,	Philadelphia,	1865
Holahan, John F.	York,	York,	1873
Hoffa, J. P.	Washingtonville,	Montour,	1882
Holt, Jacob F.	Philadelphia,	Philadelphia,	1876
Homet, Volney	Camptown,	Bradford,	1870
Hoover, N. M.	North Hope,	Butler,	1876
Hopkins, Ephraim	Marshalton,	Chester,	1876
Horner, Caleb W.	Philadelphia,	Philadelphia,	1879
Horner, Charles	Gettysburg,	Adams,	1875
Horner, E. H.	Turbotville,	Northumberl'd,	1877
Horner, Robert	Gettysburg,	Adams,	1876
Horton, Geo. F.	Terrytown,	Bradford,	1862
Hosack, J. P.	Mercer,	Mercer,	1870
Hoskins, Percy C.	Milltown,	Chester,	1876
Houpt, Fred L.	Sunbury,	Northumberland,	1877
Houston, J. Willis	Collamer,	Chester,	1880
Howland, C. A.	Shippensburg,	Cumberland,	1877
Huffman, D. C.	McKeesport,	Allegheny,	1880
Hughes, J. W.	Blairsville,	Indiana,	1869
Hull, A. P.	Montgomery Sta.,	Lycoming,	1877
Hull, Thomas R.	Milton,	Northumberl'd,	1877
Hull, W. R.	Williamsport,	Luzerne,	1864
Hummel, C. C.	Mechanicsburg,	Cumberland,	1881
Humphreys, G. L.	Irwin,	Westmoreland,	1877
Humphrey, Wm. T.	Osceola,	Tioga,	1869
Hunter, Charles T.	Philadelphia,	Philadelphia,	1878
Huselton, W. S.	Allegheny City,	Allegheny,	1870
Hutton, J. C.	Harrisburg,	Dauphin,	1873
Hyson, J. M.	York,	York,	1881
Irwin, Crawford	Hollidaysburg,	Blair,	1867
Jackson, Edw.	West Chester,	Chester,	1881
Jackson, T. M.	Hadley,	Mercer,	1878
Jacob, Harry	Altoona,	Blair,	1880
Janney, Wm. S.	Philadelphia,	Philadelphia,	1881
Jefferies, D. W.	Chester,	Delaware,	1876

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Jennings, W. H.	Blossburg,	Tioga,	1881
Jessup, S. A. S.	Kittanning,	Armstrong,	1882
Jones, H. Isaac	Hyde Park,	Lackawanna,	1877
Kamerer, J. W. B.	Greensburg,	Westmoreland,	1876
Kay, Thos. W.	Columbia,	Lancaster,	1881
Keiffer, S. B.	Carlisle,	Cumberland,	1871
Keller, D. C.	Union Deposit,	Dauphin,	1869
Kemp, Agnes	Harrisburg,	Dauphin,	1881
Kerlin, Isaac N.	Elwyn,	Delaware,	1869
Kerr, James	Pittsburg,	Allegheny,	1880
Kerr, James W.	York,	York,	1879
Keyser, Peter D.	Philadelphia,	Philadelphia,	1874
Kibler, C. B.	Corry,	Erie,	1876
King, C. B.	Allegheny,	Allegheny,	1876
King, J. C.	Reynoldsville,	Jefferson,	1880
Kirkbride, Thos. S.	Philadelphia,	Philadelphia,	1876
Kistler, E. H.	Tamaqua,	Schuylkill,	1872
Kline, L. B.	Catawissa,	Columbia,	1875
Klingensmith, I. P.	Derry Station,	Westmoreland,	1876
Knapp, C. B.	Stevensville,	Bradford,	1876
Knight, Samuel R.	Philadelphia,	Philadelphia,	1876
Knipe, J. O.	Norristown,	Montgomery,	1879
Knox, Wm. F.	McKeesport,	Allegheny,	1867
Kratz, Harvey	Hilltown,	Berks,	1879
Krise, C. W.	Carlisle,	Cumberland,	1877
Kuhn, L. DeBarth	Reading,	Berks,	1871
Kurtz, J. Ellis	Reading,	Berks,	1881
Lachenon, H. D.	Easton,	Northampton,	1874
Lane, Samuel G.	Chambersburg,	Franklin,	1870
Langfitt, W. J.	Allegheny City,	Allegheny,	1864
Larimer, W. T.	West Lebanon,	Indiana,	1880
Laubach, Stephen	Easton,	Northampton,	1876
Leadenham, J. W.	Knox,	Clarion,	1881
Leaman, Brainard	Leaman Place,	Lancaster,	1871
Leaman, Henry	Philadelphia,	Philadelphia,	1870
Lee, Benjamin	"	"	1867
Lee, Bernard R.	Reading,	Berks,	1881
Lee, John G.	Philadelphia,	Philadelphia,	1882
Leet, F. H.	Greenville,	Mercer,	1876
Leffmann, Henry	Philadelphia,	Philadelphia,	1881
Leidy, Joseph	"	"	1862
Leidy, Philip	"	"	1877
Le Moyne, F.	Pittsburg,	Allegheny,	1878
Lenher, L. H.	Harrisburg,	Dauphin,	1877
Lenker, C.	Buckhorn,	Columbia,	1880
Leonard, R.	Mauch Chunk,	Carbon,	1882
Leslie, J. D.	Susquehanna Dep.,	Susquehanna,	1879
Levan, J. R.	Philadelphia,	Philadelphia,	1880

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Levis, Richard J.	Philadelphia,	Philadelphia,	1873
Lightner, J. M.	Ephrata,	Lancaster,	1881
Lineaweaver, John K.	Columbia,	Lancaster,	1875
Linn, Geo. A.	Monongahela City,	Washington,	1875
Linville, Mont.	New Castle,	Lawrence,	1876
Lippincott, J. A.	Pittsburg,	Allegheny,	1882
Little, Wm. S.	Philadelphia,	Philadelphia,	1881
Livingston, J. B.	West Middlesex,	Mercer,	1869
Livingston, Thos. M.	Mountville,	Lancaster,	1875
Lochman, L. M.	York,	York,	1881
Longsdorf, W. H.	Dickinson,	Cumberland,	1871
Longstreth, M. Fisher	Darby,	Delaware,	1876
Loop, D. D.	North-East,	Erie,	1868
Lusk, Jos. S.	Harmony,	Butler,	1878
Lydig, J. M.	Troutville,	Clearfield,	1881
Lyon, Edward	Williamsport,	Lycoming,	1871
Lyon, Thomas	"	"	1872
Lyons, Wm.	Philadelphia,	Philadelphia,	1872
Lytle, Geo. E.	Monongahala City,	Washington,	1880
McBride, C. F.	Baldwin,	Butler,	1878
McCaa, D. J.	Ephrata,	Lancaster,	1880
McCann, James	Pittsburg,	Allegheny,	1867
McCarrell, D. M.	Hickory,	Washington,	1878
McCarroll, Jas.	Allegheny,	Allegheny,	1878
McClelland, Cochran	Philadelphia,	Philadelphia,	1877
McComb, S. F.	St. Petersburg,	Clarion,	1882
McConnell, H. S.	New Brighton,	Beaver,	1878
McConoughy, D. W.	Latrobe,	Westmoreland,	1867
McConoughy, Jas.	Mt. Pleasant,	"	1876
McConoughy, Robert	"	"	1878
McCoy, Gilbert R.	Doylestown,	Bucks,	1869
McCoy, H. L.	Smithport,	McKean,	1882
McCulloch, J. T.	Freeport,	Armstrong,	1882
McCulloch, T. C.	Oil City,	Venango,	1882
McDonald, Nesbit	Pittsburg,	Allegheny,	1869
McDonough, H. H.	Vanceville,	Washington,	1881
McElroy, Jos.	Hickory,	Washington,	1876
McGill, P.	Williamstown,	Dauphin,	1881
McGowan, H.	Harrisburg,	"	1876
McKean, J. A.	Washington,	Washington,	1878
McKennan, Thos.	"	"	1868
McKennon, M. J.	York,	York,	1876
McKenzie, Wm.	Conshohocken,	Montgomery,	1874
McKibben, D. J.	Ashland,	Schuylkill,	1879
McKinney, D. Jr.	New Brighton,	Beaver,	1868
McMullen, James	Mechanicsburg,	Indiana,	1867
McMullen, Thomas	Greenville,	"	1865
McMurray, A. S.	Philadelphia,	Philadelphia,	1864

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
McRean, Thos. A.	Philadelphia,	Philadelphia,	1874
McReynolds, H. W.	Bloomsburg,	Columbia,	1862
Mabon, Thos.	Allegheny,	Allegheny,	1869
Magill, Wm. H.	Danville,	Montour,	1870
Mahan, James T.	Newton Hamilton,	Mifflin,	1878
Mackrees, H. O.	Corry,	Erie,	1882
Maine, Geo. D.	Mainesburg,	Tioga,	1874
Mann, Chas. H.	Bridgeport,	Montgomery,	1876
Marchand, J. I.	Irwin,	Westmoreland,	1882
Marks, John J.	Lewistown,	Mercer,	1877
Marquis, David S.	Rochester,	Beaver,	1863
Martin, E. G.	Allentown,	Lehigh,	1866
Martin, H. G.	Cherry Flats,	Tioga,	1880
Massey, Isaac	West Chester,	Chester,	1882
Masten, James	Westfield,	Tioga,	1872
Mathews, Franklin	Temple,	Berks,	1875
Matson, C. M.	Brookville,	Jefferson,	1878
Matson, W. F.	"	"	1882
Matter, G. F.	Williamstown,	Dauphin,	1882
Mausteller, J. D.	Danville,	Montour,	1873
Maxwell, Jno. K.	Worthington,	Armstrong,	1880
Mayer, E. R.	Wilkesbarre,	Luzerne,	1866
Mayer, Isaac H.	Willowstreet,	Lancaster,	1877
Mays, T. J.	Upper Lehigh,	Luzerne,	1877
Meals, N. M.	Callensburg,	Clarion,	1878
Meals, S. D.	"	"	1872
Means, Wm. A.	Luthersburg,	Clearfield,	1873
Mehard, J. W.	Mercer,	Mercer,	1878
Mehard, S. S.	"	"	1871
Meisenhelder, Ed. W.	York,	York,	1877
Melhorn, E.	New Chester,	Adams,	1879
Merklein, C. H.	Chambersburg,	Franklin,	1879
Meschter, G. K.	Centre Point,	Franklin,	1876
Meyer, L. G.	Pardoe,	Mercer,	1875
Middleton, W. J.	Harrisburg,	Dauphin,	1881
Miller, A. M.	Bird-in-hand,	Lancaster,	1876
Miller, D. P.	Huntingdon,	Huntingdon,	1873
Miller, D. W.	Adamsburg,	Westmoreland,	1882
Miller, E. S.	Altoona,	Blair,	1880
Miller, O. L.	Allegheny,	Allegheny,	1867
Miller, S. G.	Everett,	Bedford,	1880
Miller, W. N.	Allegheny,	Allegheny,	1882
Milligan, J. D,	Madison,	Westmoreland,	1882
Milliken, D. B.	Landisburg,	Perry,	1864
Mills, Chas. K.	Philadelphia,	Philadelphia,	1879
Mills, Edward	Ulster,	Bradford,	1869
Milner, R. H.	Chester,	Delaware,	1879
Mingle, D. H.	Millheim,	Centre,	1880

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Minnich, A. K.	Philadelphia,	Philadelphia,	1881
Mixsell, Jos.	Easton,	Northampton,	1874
Montgomery, E. E.	Philadelphia,	Philadelphia,	1881
Montgomery, John	Chambersburg,	Franklin,	1871
Moody, George O.	Titusville,	Crawford,	1869
Moody, H. Mont.	Bradford,	Bradford,	1869
Moore, E. W.	Fanklin,	Venango,	1882
Morris, J. Cheston	Philadelphia,	Philadelphia,	1870
Morrison, M. P.	Monongahela City,	Washington,	1871
Morrow, J. J.	Sheakleyville,	Mercer,	1876
Moss, Geo. W.	Kirby,	Greene,	1879
Mosser, E. N.	Mechanicsburg,	Cumberland,	1873
Mossman, B. E.	Greenville,	Mercer,	1870
Mowry, R. B.	Allegheny,	Allegheny,	1865
Muhlenberg, W. F.	Reading,	Berks,	1875
Mumma, E. W.	Bendersville,	Adams,	1879
Murdoch, F. H.	Bradford,	McKean,	1882
Murdock, J. B.	Pittsburg,	Allegheny,	1876
Murphy, Joseph A.	Wilkesbarre,	Luzerne,	1874
Musser, C. Sumner	Aaronsburg,	Centre,	1881
Musser, F. M.	Witmer,	Lancaster,	1874
Musser, Henry E.	"	"	1881
Musser, J. Henry	Lampeter,	"	1876
Musser, P. T.	Aaronsburg,	Centre,	1878
Nancrede, Chas. B.	Philadelphia,	Philadelphia,	1879
Nash, J. D.	"	"	1876
Nebinger, Andrew	"	"	1862
Neely, Jas. W.	Pittsburg,	Allegheny,	1879
Nelan, J. R.	Brownsville,	Fayette,	1878
Newbaker, P. C.	Washingtonville,	Montour,	1879
Newcomet, H. W.	Philadelphia,	Philadelphia,	1874
Newton, D. N.	Towanda,	Bradford,	1874
Neyman, A. M.	Butler,	Butler,	1867
Nipple, H. M.	Freeburg,	Snyder,	1881
Noble, Wm. P.	Upton,	Franklin,	1879
Nolan, Edw. J.	Philadelphia,	Philadelphia,	1879
Nutt, Geo. D.	Williamsport,	Lycoming,	1878
Offutt, L.	Penn Station,	Westmoreland,	1880
Ogleby, James	Danville,	Montour,	1875
O'Hara, Michael	Philadelphia,	Philadelphia,	1874
O'Neal, J. W. C.	Gettysburg,	Adams,	1876
O'Neil, John J.	Philadelphia,	Philadelphia,	1874
Orris, H. O.	Newport,	Perry,	1873
Orth, H. L.	Harrisburg,	Dauphin,	1868
Ott, Isaac	Easton,	Northampton,	1871
Owens, W. R.	Ashland,	Schuylkill,	1875
Packard, John H.	Philadelphia,	Philadelphia,	1877
Packer, Nelson	Wellsboro',	Tioga,	1870

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Palmer, Chas. T.	Pottsville,	Schuylkill,	1878
Pancoast, Wm. H.	Philadelphia,	Philadelphia,	1867
Parcels, W. T.	Lewistown,	Mifflin,	1882
Parish, Wm. H.	Philadelphia,	Philadelphia,	1879
Park, J. W.	Williamstown,	Dauphin,	1882
Parke, A. G. B.	Gap,	Lancaster,	1877
Partenheimer, John R.	Philadelphia,	Philadelphia,	1876
Patterson, J. A.	Zollarsville,	Washington,	1881
Pearson, J. W.	York Spring,	Adams,	1881
Peebles, H. H.	New Castle,	Lawrence,	1876
Pennepacker, H.	Harford,	Susquehanna,	1876
Pepper, William	Philadelphia,	Philadelphia,	1875
Perdue, W. R.	Unionville,	Chester,	1881
Perkins, E. Stanley	Philadelphia,	Philadelphia,	1874
Pflueger, C. F.	Seidersville,	Northampton,	1874
Pfouts, Geo. J.	Jersey Shore,	Lycoming,	1881
Phelps, W. C.	Philadelphia,	Philadelphia,	1869
Phillips, Ellis	New Haven,	Fayette,	1880
Phillips, Wm. L.	Lancaster,	Lancaster,	1878
Pickett, M.	Corry,	Erie,	1882
Pillow, R. H.	Butler,	Butler,	1878
Pollock, A. M.	Pittsburg,	Allegheny,	1871
Porter, Wm. G.	Philadelphia,	Philadelphia,	1878
Pownall, H. W.	Atglen,	Chester,	1881
Prall, C. R.	Philadelphia,	Philadelphia,	1876
Price, Jacob	West Chester,	Chester,	1864
Pursell, Isaac	Danville,	Montour,	1874
Quail, C. E.	Auburn,	Schuylkill,	1877
Quick, R. A.	Sugar Run,	Bradford,	1875
Radebaugh, J. M.	Gettysburg,	Adams,	1880
Rahauser, G. G.	Pittsburg,	Allegheny,	1876
Rahter, C. A.	Harrisburg,	Dauphin,	1873
Ralston, R. G.	Curwensville,	Armstrong,	1882
Ramsay, Robt. W.	St. Thomas,	Franklin,	1877
Rankin, D. N.	Allegheny,	Allegheny,	1867
Rankin, M. M.	Rockdale Mills,	Jefferson,	1881
Raudenbash, A. S.	Adamstown,	Berks,	1874
Read, F. B.	Osceola Mills,	Clearfield,	1880
Reagan, G. L.	Shenandoah,	Schuylkill,	1870
Reber, W. M.	Bloomsburg,	Columbia,	1876
Redeker, F. W.	Espy,	Columbia,	1881
Redick, S. T.	Allegheny City,	Allegheny,	1875
Reed, Joseph A.	Dixmont,	Allegheny,	1877
Reed, J. H.	Sharon,	Mercer,	1882
Reichard, C. C.	Brownsville,	Fayette,	1878
Reichard, P. L.	Allentown,	Lehigh,	1868
Reid, A. M.	Clarion,	Clarion,	1882
Reid, J. K.	Conshohocken,	Montgomery,	1867

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Reilly, G. W.	Harrisburg,	Dauphin,	1876
Reilly, Wm. F.	Carlisle,	Cumberland,	1880
Reiter, W. C.	Pittsburg,	Allegheny,	1869
Rentschler, H. D.	Ringtown,	Schuylkill,	1878
Rhodes, Almira F.	Cambridgeton,	Crawford,	1882
Rice, Wm.	Rome,	Bradford,	1875
Richardson, Jos. G.	Philadelphia,	Philadelphia,	1877
Richter, A.	Williamsport,	Lycoming,	1872
Rickards, W. M. L.	Philadelphia,	Philadelphia,	1875
Riemsnyder, B. J.	Hinkletown,	Lancaster,	1881
Rigg, J. E.	Stoners,	Westmoreland,	1882
Riggs, Elliott S.	Allegheny,	Allegheny,	1876
Righter, Washington	Philadelphia,	Philadelphia,	1879
Risley, S. D.	"	"	1878
Ritchey, John A.	Oil City,	Venango,	1874
Robbins, E. S.	Covington,	Tioga,	1880
Roberts, John B.	Philadelphia,	Philadelphia,	1878
Robins, O. M.	Shamokin,	Northampton,	1875
Roebuck, P. J.	Litiz,	Lancaster,	1866
Rogers, R. E.	Philadelphia,	Philadelphia,	1870
Roland, Oliver	Lancaster,	Lancaster,	1878
Roland, W. S.	York,	York,	1876
Roller, W. C.	Hollidaysburg,	Blair,	1869
Roop, J. W.	New Cumberland,	Cumberland,	1877
Ross, James	Clarion,	Clarion,	1867
Ross, John D.	Williamsburg,	Blair,	1863
Ross, J. Frank	Clarion,	Clarion,	1870
Ross, S. M.	Altoona,	Blair,	1864
Rothrock, A.	McVeytown,	Mifflin,	1877
Rothrock, R.	Middleburg,	Snyder,	1880
Rouse, S. J.	York,	York,	1881
Rowell, W. R.	Siddensburg,	"	1881
Rupp, H.	Hummelstown,	Dauphin,	1877
Rutledge, S. R.	Blairsville,	Indiana,	1879
Sample, John	Wilkinsburg,	Allegheny,	1866
Sampson, T. W.	Emlenton,	Venango,	1876
Sandt, John	Easton,	Northampton,	1871
Santee, Eugene I.	Philadelphia,	Philadelphia,	1874
Sargent, Goram P.	Radnor,	Delaware,	1870
Sarver, William	Allegheny City,	Allegheny,	1869
Schoales, J. D.	Philadelphia,	Philadelphia,	1878
Schofield, E. Lane	Wiconisco,	Dauphin,	1881
Schrack, David	Jeffersonville,	Montgomery,	1867
Schrack, John	"	"	1862
Schultz, S. S.	Danville,	Montour,	1867
Scott, Franklin P.	Monongahela,	Washington,	1872
Seabrook, C. C.	Harrisburg,	Dauphin,	1879
Seem, A. A.	Bangor,	Northampton,	1879

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Seem, A. K.	Martin's Creek,	Northampton,	1870
Seibert, W. H.	Steelton,	Dauphin,	1877
Seiler, Carl	Philadelphia,	Philadelphia,	1881
Seip, Amos	Easton,	Northampton,	1863
Seiss, R. S.	Littlestown,	Adams,	1881
Shannon, B. F.	Schuylkill Haven,	Schuylkill,	1875
Shapleigh, E. B.	Philadelphia,	Philadelphia,	1876
Shaw, Thos. W.	Pittsburg,	Allegheny,	1866
Sheaffer, A. H.	Lewistown,	Mifflin,	1876
Sheaffer, U. R.	Farmersville,	Lancaster,	1881
Shearer, Jas. Y.	Sinking Spring,	Berks,	1868
Shearer, Jas. M.	Dillsburg,	York,	1877
Sheibly, J. P.	Landisburg,	Perry,	1879
Sheller, Abram	Mount Joy,	Lancaster,	1868
Shelly, A. F.	Philadelphia,	Philadelphia,	1876
Shepler, J. T.	Dunbar,	Fayette,	1880
Sherk, Levi A.	Union Forge,	Lebanon,	1879
Sherwood, O. C.	Union City,	Erie,	1882
Shindel, John Y.	Middleburg,	Snyder,	1881
Shive, Peter C.	Plainsville,	Luzerne,	1867
Shoemaker, John V.	Philadelphia,	Philadelphia,	1878
Shoemaker, Wm. P.	Bradford,	McKean,	1880
Short, R. N.	Mechanicsburg,	Cumberland,	1867
Shrawder, Jno. S.	Ambler,	Montgomery,	1870
Sibbet, R. L.	Carlisle,	Cumberland,	1870
Silliman, J. E.	Erie,	Erie,	1878
Simington, R. S.	Danville,	Montour,	1868
Singer, J. E.	Newport,	Perry,	1866
Skillern, S. R.	Philadelphia,	Philadelphia,	1876
Sloan, Jas. G.	Monongahela City,	Washington,	1879
Smaltz, J. Henry	Philadelphia,	Philadelphia,	1862
Smathers, W. J.	Du Bois,	Clearfield,	1880
Smith, Albert H.	Philadelphia,	Philadelphia,	1879
Smith, Amos H.	Paradise,	Lancaster,	1879
Smith, Geo. W.	Hollidaysburg,	Blair,	1866
Smith, Henry H.	Philadelphia,	Philadelphia,	1870
Smith, J. M.	Tyrone,	Blair,	1872
Smith, John K.	Harrisburg,	Dauphin,	1880
Smith, J. R.	Pine Grove Mills,	Centre,	1877
Smith, L. A.	New Milford,	Susquehanna,	1864
Smith, Robert B.	Tioga,	Tioga,	1871
Smith, W. C. J.	Pottsville,	Schuylkill,	1879
Smith, W. H.	Intercourse,	Lancaster,	1881
Snively, A. J.	Hanover,	York,	1879
Snively, I. N.	Waynesboro',	Franklin,	1873
Snively, Wm.	Pittsburg,	Allegheny,	1878
Snodgrass, Jas. H.	"	"	1869
Snowden, S. G.	Franklin,	Venango,	1869

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Spackman, R. V.	Luthersburg,	Clearfield,	1875
Spangler, B. F.	York,	York,	1877
Spaulding, S. C.	Shenandoah,	Schuylkill,	1876
Spratt, Geo. R.	Coatesville,	Chester,	1877
Stahley, G. D.	Harrisburg,	Dauphin,	1876
Stayer, A. D.	Roaring Springs,	Blair,	1876
Stebbins, Sumner	Unionville,	Chester,	1863
Stehman, H. B.	Lancaster,	Lancaster,	1881
Steinmetz, E. G.	Hokendauqua,	Lehigh,	1875
Stephens, Wm. O.	Avondale,	Chester,	1876
Stetler, John G.	Philadelphia,	Philadelphia,	1868
Stevenson, S.	New Bedford,	Lawrence,	1878
Stewart, J. L.	Erie,	Erie,	1867
Stewart, Thos.	Carlisle,	Cumberland,	1875
Stewart, W. G.	Newville,	"	1873
Stewart, W. H.	Kittanning,	Armstrong,	1878
Stewart, Wm. S.	Philadelphia,	Philadelphia,	1877
Stiles, Geo.	Conshohocken,	Montgomery,	1876
Stille, Alfred	Philadelphia,	Philadelphia,	1862
Stinson, Mary	Norristown,	Montgomery,	1881
Stoner, Wm. B.	Northumberland,	Northumberland,	1877
Strawbridge, Geo.	Philadelphia,	Philadelphia,	1876
Strawbridge, J. D.	Danville,	Montour,	1871
Strickland, D. H.	Erie,	Erie,	1868
Strickler, A. H.	Waynesboro',	Franklin,	1875
Strickler, M. B.	New Bloomfield,	Perry,	1877
Stubbs, Geo. E.	Philadelphia,	Philadelphia,	1874
Stubbs, J. H.	London Grove,	Chester,	1879
Sturgeon, W. H.	Uniontown,	Fayette,	1876
Suesserott, J. L.	Chambersburg,	Franklin,	1873
Sutton, R. S.	Pittsburg,	Allegheny,	1879
Swartz, Joseph	Duncannon,	Perry,	1862
Swayze, Mary Alice	Pottsville,	Schuylkill,	1877
Swigart, J. R.	Bannerville,	Snyder,	1879
Swisher, Thos. J.	Jerseytown,	Columbia,	1871
Taggart, David	Frackville,	Schuylkill,	1881
Taylor, J. Howard	Philadelphia,	Philadelphia,	1879
Taylor, Wm. T.	"	"	1873
Temple, H. T.	New Sheffield,	Beaver,	1878
Thayer, Alvin	Erie,	Erie,	1869
Thickstun, G.	Wattsburg,	Erie,	1881
Thomas, A. G.	Freeport,	Armstrong,	1882
Thomas, Chas. H.	Philadelphia,	Philadelphia,	1879
Thomas, J. D.	Buchanan,	Allegheny,	1872
Thomas, O. W.	Arndtsville,	Adams,	1880
Thome, Wm. B.	Mastersonville,	Lancaster,	1881
Thompson, Benjamin	Landenberg,	Chester,	1870
Thompson, C. K.	Wellsboro',	Tioga,	1871

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Thompson, L. M.	Mahanoy City,	Schuylkill,	1873
Thompson, Sydney	Spruce Creek,	Huntingdon,	1879
Thompson, W. R.	Washington,	Washington,	1878
Thomson, J. A.	Wrightsville,	York,	1872
Thomson, John C.	Bellwood,	Blair,	1880
Todd, Fred	Hontzsdale,	Clearfield,	1880
Trabert, J. W.	Reamstown,	Lancaster,	1876
Travers, D. B.	Steelton,	Dauphin,	1877
Treichler, A. C.	Elizabethtown,	Lancaster,	1871
Treichler, C. Galen	Honeybrook,	Chester,	1879
Troth, Samuel N.	Philadelphia,	Philadelphia,	1863
Turnbull, Chas. S.	"	"	1879
Turnbull, Laurence	"	"	1864
Tweedle, J. B.	Weatherby,	Carbon,	1882
Twitmyre, J. H.	Sharpsville,	Mercer,	1875
Tyson, A. R.	Norristown,	Montgomery,	1879
Tyson, James	Philadelphia,	Philadelphia,	1875
Ulrich, Wm. B.	Chester,	Delaware,	1870
Umberger, J. R.	Dauphin,	Dauphin,	1870
Underwood, Gideon	Pittston,	Luzerne,	1870
Unger, David F.	Mercersburg,	Franklin,	1881
Van Kirk, T. R.	McKeesport,	Allegheny,	1870
Van Treis, J. M.	St. Thomas,	Franklin,	1876
Van Valzah, F. H.	Spring Mills,	Centre,	1881
Van Valzah, H. B.	Clearfield,	Clearfield,	1876
Van Valzah, Thos. H.	Lewistown,	Mifflin,	1882
Vanvoorhis, J. S.	Bellevernon,	Fayette,	1869
Varian, Wm.	Titusville,	Crawford,	1870
Vastine, J. H.	Numidia,	Columbia,	1875
Vogler, Geo. W.	Philadelphia,	Philadelphia.	1881
Wagenseller, B. F.	Selinsgrove,	Snyder,	1877
Waggoner, D. R.	McKean,	Bradford,	1882
Walker, R. L.	Mansfield,	Allegheny,	1870
Walter, J. B.	Centrebridge,	Bucks,	1874
Waters, D. C.	Arnot,	Tioga,	1877
Weaver, J. G.	Strasburg,	Lancaster,	1881
Weaver, J. K.	Norristown,	Montgomery,	1875
Weaver, S. J.	Weaverville,	Northampton,	1875
Webb, W. H.	Philadelphia,	Philadelphia,	1875
Webb, W. W.	Wellsboro',	Tioga,	1869
Wehner, Jacob H.	Germantown,	Philadelphia,	1868
Weidman, W. Murray	Reading,	Berks,	1867
Weist, Jno.	York,	York,	1877
Welch, Wm. M.	Philadelphia,	Philadelphia,	1870
Welchans, Geo. R.	Lancaster,	Lancaster,	1879
Wells, J. Ralston	Philadelphia,	Philadelphia,	1869
Welsh, W. S.	Franklin,	Venango,	1872
Wentz, Wm. J.	New Providence,	Lancaster,	1876

NAMES.	POST-OFFICE.	COUNTY.	DATE OF MEM'SHIP.
Werner, Andrew J.	Duncannon,	Perry,	1873
Weseman, Geo. T.	Bainbridge,	Lancaster,	1880
Weymouth, W. C.	Renovo,	Lycoming,	1882
Whann, W. Lowrie	Franklin,	Venango,	1870
Whitcomb, Henry H.	Norristown,	Montgomery,	1881
White, T. H.	Williamsburg,	Blair,	1873
Whiteside, J. E.	Philadelphia,	Philadelphia,	1875
Wiggins, S. L.	Black Lick,	Indiana,	1882
Willoughby, J.	Clifton Heights,	Chester,	1881
Wilmot, E. F.	Great Bend,	Susquehanna,	1875
Wilson, C. G.	St. Marys,	Elk,	1882
Wilson, H. R.	Parkersville,	Butler,	1882
Wireback, I. J.	St. Petersburg,	Clarion,	1882
Wishart, H. S.	Harrisonville,	Fulton,	1879
Witman, Henry O.	Harrisburg,	Dauphin,	1866
Wittig, Charles F.	Philadelphia,	Philadelphia,	1863
Wolfe, Sam'l	Skippackville,	Montgomery,	1876
Wood, C. B.	Monongahela City,	Washington,	1880
Wood, E. A.	Pittsburg,	Allegheny,	1867
Wood, H. C.	Philadelphia,	Philadelphia,	1876
Woodbury, Frank	"	"	1880
Woods, J. F.	Boalsburg,	Centre,	1876
Woods, L. N.	Wheatland,	Mercer,	1878
Woods, W. W.	Stanton,	Jefferson,	1882
Woodward, Chas. E.	West Chester,	Chester,	1881
Worrell, John W.	Bellevernon,	Fayette,	1882
Wright, Olin S.	Bradford,	McKean,	1881
Yarrow, T. J.	Philadelphia,	Philadelphia,	1870
Yost, George P.	Logansville,	York,	1880
Young, Theodore J.	Titusville,	Crawford,	1872
Zeigler, G. Winfield	Carlisle,	Cumberland,	1878
Zeigler, S. P.	"	"	1870
Ziegler, Jacob L.	Mount Joy,	Lancaster,	1865
Ziegler, J. P.	"	"	1881

OFFICERS AND MEMBERS OF COUNTY SOCIETIES

At the session held in Titusville, May, 1882, it was

Resolved, That each County Medical Society be instructed to report, with its list of members, the place and date of graduation, or other requirements for practice, of each, as registered under the action of the new law.

(These reports are published just as they were furnished. —W. B. A.)

Abbreviations: – Uni. Pa., University of Pennsylvania; J. M. C., Jefferson Medical College; Uni. Md., University of Maryland; Bellevue, Bellevue Hospital Med. Coll.; Wash. Uni., Washington University, Baltimore; Cinci. C. M. S., Cincinnati College of Medicine and Surgery; Coll. of P. & S., N. Y., College of Physicians and Surgeons, New York; Phila. M. C., Philadelphia Medical College; W. R. M. C., Western Reserve Med. Coll.

NOTE.—Counties marked thus (?) made no report for 1882.

ADAMS COUNTY.

OFFICERS.

President,	A. Noel,	Bonneauville.
Vice-Presidents,	J. L. Sheetz,	New Oxford.
	V. H. B. Lilly,	McSherrytown.
Recording Secretary,	J. B. Scott,	Gettysburg.
Corresponding Secretary,	J. W. C. O'Neal,	"
Treasurer,	E. W. Mumma,	Bendersville.

MEMBERS.

Arndtsville—
Thomas, O. W., Uni. Pa., '74.

Bendersville—
Mumma, E. W., Uni. Md., '51.

Bonneauville—
Noel, A., Uni. Md., '62.

Gettysburg—
Horner, Chas., Uni. Pa., '46.
Horner, Robert, Uni. Pa., '47.
O'Neal, J. W. C., Uni. Md., '44.
Scott, J. B., Uni. Pa., '80.

Hunterstown—
Felty, J. C., Uni. Pa., '73.

Littlestown—
Seiss, R. S., Uni. Md., '52.

McKnightstown—
Elderdice, R. B., Cinci. C. M. & S., '68.
Oyler, W. H., Uni. N. Y., '82.

McSherrytown—
Lilly, V. H. B., Uni. Md., '69.
Millerstown—
Beaver, A. P., J. M. C., '78.
New Chester—
Melhorn, E., Phila. Med. C., '57.
New Oxford—
Sheetz, J. L., Uni. Pa., '79.
Waddell, J. D., Wash. Uni., Baltimore, '72.
Petersburg—
Dill, A. B., Bellevue, '65.
Pearson, J. W., 30 yrs. practice.

ALLEGHENY COUNTY.

Officers.

President,	J. M. Stevenson,	Pittsburg.
Vice-Presidents,	T. D. Davis,	"
	S. T. Redick,	Allegheny.
Recording Secretary,	Elliott S. Riggs,	"
Assist. Recording Secretary,	A. V. Chesrown,	Pittsburg.
Corresponding Secretary,	J. G. Connell,	Oakland.
Treasurer,	W. S. Huselton,	Allegheny.

Members.

Allegheny City—Bigham, Jas.
Buchanan, J. G.
Christie, J. H.
Cole, W. W.
Easton, A.
Faulkner, R. B.
Gilliford, R. H.
Heckleman, H. W.
Herron, W. M.
Huselton, W. S.
Kerr, J. W.
King, C. B.
Kirker, John
Mabon, Thos.
McCarrell, Jas.
McCready, R. J.
Miller, O. L.
Mowry, R. B.
Phillips, John S.
Rankin, D. N.
Rankin, W. D.
Redick, Samuel T.
Riggs, D. W.
Riggs, E. S.
Sarver, Wm.
Schmauser, Theo.
Shillito, G. M.
Voight, C. H.
Wright, J. H.
Beers—Jennings, S. D.
Crafton—Foster, D. G.
Dixmont—Ayres, Samuel
Reed, Jos. A.
Wiley, Chas. C.
Mansfield—Walker, R. L.
Mansfield Valley—Parker, W. C.
McKeesport—Knox, Wm. F.
Huffman, D. C.
Vankirk, T. R.
Oakland—Connell, Jas. G.
Pittsburg—Asdale, W. J.
Arnholt, M. A.
Batten, Jno. M.
Blumberg, Albert
Brewster, A. D.
Bruce, Geo. D.
Case, A. G.
Chesrown, A. V.
Christy, T. C.
Clark, H. H.
Craighead, J. A.
Daly, W. H.
Davis, D. L.
Davis, Thos. D.
Duff, J. M.
Duncan, J. A.
Dunn, J. C.
Dyer, Ezra

Pittsburg—
Emmerling, C.
Evans, T. R.
Fleming, A.
Foster, W. S.
Fundenburg, G. B.
Fundenburg, W. F.
Gallaher, R. C.
Gallaher, T. J.
Greene, Jos. B.
Grimes, J. J.
Hengst, D. A.
Jones, M. D.
Kerr, Jas.
Koeller, Frank
Lee, J. W.
Lange, Chris.
LeMoyne, F.
Lippincott, J. A.
MacCord, Geo. T.
McCann, Jas.
McCready, J. A.
McDonald, Nesbit
McFarlane, J. W.
McKelvey, W. H.
McNary, H. A.
McNeil, Geo. W.
Martin, E. W.
Miller, W. N.
Murdoch, J. B.
Pittsburg—
Neely, J. W.
O'Connor, H. R.
Patten, N. N. P.
Pollock, A. M.
Rahauser, Geo. G.
Rea, Jas. C.
Reiter, W. C.
Rex, T. A.
Robinson, Jas.
Shaw, Thos. W.
Shaw, W. C.
Snively, Whitmer
Snodgrass, Jas. H.
Speer, Alex.
Staub, F. N.
Sterrett, J. P.
Stevenson, Edw. S.
Stevenson, Jas. M.
Stewart, J. S.
Sutton, R. S.
Thomas, J. D.
Wallace, J. A.
Wallace, Wm.
Werder, X. O.
Williams, Roger
Wishart, J. W.
Wood, E. A.
Wilkinsburg—Sample, John
Verona—Hamilton, J. M.

ARMSTRONG COUNTY.

Officers.

President,	T. H. Allison,	Kittanning.
Vice-President,	J. G. Cunningham,	"
Corresponding Secretary,	M. H. Alter,	"
Recording Secretary,	J. T. McCulloch,	Freeport.
Treasurer,	W. H. Stewart,	Kittanning.

Members.

Apollo—Ainsley, W. B.
M'Cauly, R. E., Coll. of P. & S., N. Y., '81.
Cochran Mills—
McKee, J. W., Uni. Cleveland, '72.
Dayton—
Stockdrill, T. F., J. C. M., '78.
Elderton—Mateer, R. M., J. M. C., '73.
Freeport—Cook, W. J., Miami M. C.
Gillespie, C. B., Phila. M. C., '58.
McCulloch, J. T., Jeff. M.C., '77.
McCurdy, R. L., Western Reserve M. C., '53.
Morrow, W. L., Jeff. M.C., '55.
Thomas, A. G., Uni. N. Y., '66.

Kelly Station—
Heilman, U. O., Coll. P. & S., Balt., '80.
Kittanning—
Allison, T. H., Jeff. M. C., '54.
Allison, T. D. M., Jeff. M. C., '72.
Alter, M. H., Coll. of P. & S., Balt., '78.
Bowman, R. P.
Cunningham, J. G., J. M. C., '69.
Jessup, Chas. J., Jeff. M. C., '74.
Jessup, S. A. S., J. M. C., '79.
Stewart, W. H., Jeff. M. C., '71.
Leechburg—
Hunter, R. P., Jeff. M. C., '69.
Montgomery, W. H., Coll. P. & S., Balt., '81.
Manorville—
Deemer, J. T., J. M. C., '79.
Middlesex—Ralston, R. G.
Orrville—
Marshall, R. P., Miami M. C., '73.
Parker—Hall, Jos. E., J. M. C., '69.
Hoover, A. M., Cleveland M. C., '69.
Phœnix—Metzler, S. N.
Slate-lick—
Cheesman, J. C., Miami M. C., '78.
Johnson, A. D.
McKee, J. C., Cin. C. M. & S., '76.
South Bend—
George, M. R., J. M. C., '75.
Whitesburg—
Kelly, J. A., Univ. Wooster, '74.
Worthington—
Maxwell, J. K., Univ. Pa., '67.

BEAVER COUNTY.

Officers.

President,	W. H. Grim,	Beaver Falls.
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Treasurer,	D. S. Marquis,	Rochester.

Members.

Allegheny City (Alle'y Co.)—
Langfitt, W. J., Rush M. C., '67.
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Boal, G. Y., Cinci. C. M. & S., '70.
Beaver—Riggs, W. J.
Scroggs, Jas., Jr., Cinci. C. M. & S., '72.
Wilson, J. H., Bellevue, '76.
Beaver Falls—
Elliot, J. S., 30 years' practice.
Grim, W. H., Jeff. M. C., '69.
Simpson, Theo. P., Bellevue, '77.
Darlington—
Vance, B. A., Miami M. C. '77.
Economy—Feicht, Benj.
Freedom—
Craig, Stephen A., Cin. C. M. & S., '77.
Hookstown—
Gale, C. T., J. M. C., '78.
Hookstown—
McPheeters, W. D., Western Reserve, '70.
New Brighton—
McConnell, H. S., Bellevue, '75.
McKinney, David, Jr., J. M. C., '60.
Simpson, W. C., Bellevue, '73.
White, J. K., Uni. Louisville, '77.
New Galilee—
McGeehan, W. A., Uni., Wooster, '73.
Rochester—
Marquis, David S., Med. Coll. Ohio, '45.
Shoustown (Alle'y Co.)—Barr, Jas. A.
Water Cure—Temple, J. C.
West Bridgewater—
Ramsey, W. S., Western Reserve, '77.

BERKS COUNTY.

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	Jos. Coblentz,	Reading.
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Corresponding Secretary,	John B. Brooke,	"
Treasurer,	J. B. Stearley,	"

Members.

Bernville—
- Brobst, John A., Penn. M. C., '5[illegible].
- Byerle, Geo. W., Jeff. M. C., '53.

Fredericksburg (Lebanon Co.)—
- Shirk, Levi A., Uni. Pa., '73.

Leesport—
- Brobst, Edward, Penn. M.C., '53.

Lenhartsville—
- Seaman, John K., Bellevue M. C., '69.

Maiden Creek—
- Hunsberger, Wm. E., Jeff. M.C., '67.

Pricetown—
- Weber, Chas., Uni. Tubingen, '49.

Reading—
- Bachman, C. H., Jeff. M. C., '81.
- Brooke, John B., Jeff. M. C., '58.
- Cleaver, Israel, Uni. Pa., '63.
- Coblentz, Jos., Uni. Pa., '50.
- Dundore, A. B., Jeff. M. C., '64.
- Good, Frank H., Uni. Pa., '78.
- Herbst, H. Herbert, Uni. Pa., '81.
- Kuhn, L. DeB., Uni. Pa., '54.
- Kurtz, Samuel L., Jeff. M. C., '54.
- Kurtz, J. Ellis, Jeff. M. C., '77.
- Lee, Bernard R., Jeff. M. C., '79.
- Loose, C. G., Uni. Pa., '68.
- Muhlenberg, Wm. F., Uni. Pa., '72.
- Randenbush, Abram, Jeff. M. C., '64.
- Stearly, J. B., Penn. M. C., '57.
- Weidman, W. Murray, Uni. Pa., '60.

Rehrersburg—
- Bickle, Geo. H., Jeff. M. C., '78.

Sinking Spring—
- Shearer, Jas. Y., Jeff. M. C., '62.

Temple—
- Matthews, Jas. M., Jeff. M. C., '40.

BLAIR COUNTY.

Officers.

President,	R. W. Christy,	Sabbath Rest.
Vice-Presidents,	Jno. C. Thompson,	Bellwood.
	J. M. Brown,	Mines.
Secretary,	E. S. Miller,	Altoona.
Treasurer,	W. S. Ross,	"

Members.

Altoona—
- Arney, G. F., Jeff. M. C., '78.
- Brehman, Geo. E.
- Cairns, S. R., Jeff. M. C., '81.
- Closson, C. H., Jeff. M. C.

Altoona—
Crosthwaite, D. W., Uni. Pa., '81.
Fay, John, Jeff. M. C., '55.
Findley, Wm.M.,Uni.Pa.,'67.
Findley, Wm. R. (Certificate).
Fulton, J. F.
Hartzell, H. L., Bellevue, '81.
Jacob, Harry, Jeff. M. C., '79.
Miller, E. S., Uni. Pa., '78.
Ross, S. M., Jeff. M. C., '50.
Ross, W. S., Uni. Wooster, '76.
Bellwood—
Thompson, John C., Jeff. M. C., '78.
Claysburg—
Johnston, J. W., Albany M. C., '65.
Duncansville—
Confer, D. C., Uni. Pa., '81.
Hollidaysburg—Hays, D. S.
Irwin, Crawford, Jeff. M. C. '44.
Irwin, Robert C., Uni. Pa., '79.
Landis, J. A., Uni. Md.,'28.
Roller, W. C., J. M. C., '61.
Hollidaysburg—
Smith, Geo. W., Uni. Pa., '62.
Martinsburg—Bloom, F. G., Uni. Pa,
Bloom, Homer C., Uni. Pa., '78.
Bonebreak, D. W., Bellevue, '64.
Mines—
Brown, J. M., Uni. Louisville, '82.
Newry—
Black, M. F., J. M. C., '73.
Roaring Spring—
Stayer, A. S., J. M. C., '73.
Sabbath Rest—
Christy, R. W., J. M. C., '74.
Spruce Creek—
Thompson, Sidney, Jeff. M. C.
Tyrone—
Burket, G. W., Western Reserve, '57; Bellevue, '67.
Clarke, Rowan, Jeff. M. C., '54.
Gemmill, J. M., Jeff. M. C., '70.
Smith, Jas. M., Uni. Pa., '70.
Williamsburg—
Ake, Jos. H., Jeff. M. C., '50.
Arnold, J. F., N. Y. Uni., '67.
Ross, John D., Uni. Pa., '32.
White, T. H., Jeff. M. C., '70.

BRADFORD COUNTY.

OFFICERS.

President,	J. B. Johnson,	Towanda.
Vice-Presidents,	C. H. Scott,	Athens.
	J. W. Lyman,	Towanda.
Recording Secretary,	C. K. Ladd,	"
Corresponding Secretary,	F. G. Newton,	"
Treasurer,	D. N. Newton,	"

MEMBERS.

Athens—
Allen, E. P., Berkshire M. C., '47.
Scott, C. H., Jeff. M. C., '78.
Barclay—
Hillis, W. J., Jeff. M. C., '58.
Johnson, C. H., Buffalo M. C., '73.
Burlington—
Everett, E.A., Albany M. C.,'56.
Tracey, G. P., Jeff. M. C., '59.
Camptown—
Homet, Volney, Jeff. M. C., '56.
Dushore (Sullivan Co.)—
Waddel, W.
Franklindale—
Kilbourn, H. B., Jeff. M. C., '79.
Herrickville—
Stephens, A. R., Albany M. C., '56.
Laceyville—Ely, R. H.

Laporte (Sullivan Co.)—
S. F. Colt, 40 years' practice.
LeRaysville—
Dusenbury, C. S., Bellevue, '65.
Monroeton—
Rockwell, O. H., Uni. Pa. '73.
Orwell—
Conklin, Gustavus, Jeff. M. C., '82.
Sayre—
Anderson, M. E., Uni. N. Y., '80.
Standing Stone—
Claggett, W. L., Ohio M. C., '74.
Sugar Run—
Quick, P. A., Buffalo Uni., '74.
Wilson, H. A., Buffalo Uni., '82.
Terrytown—
Horton, Geo. F., Geneva M. C., '64.
Towanda—
De la Montayne, L., J. M. C., '61.
Johnson, J. B., Bellevue M. C., '68.
Ladd, C. K., Uni. Pa., '77.
Lyman, J. W., Jeff. M. C., '49.
Newton, D. N., Penn. M. C., '48.
Newton, F. G., Jeff. M. C., '80.
Payne, E. D., Jeff. M. C., '57.
Woodburn, S. M., Uni. Pa., '72.
Troy—Tracey, E. G.—No diploma.
Ulster—
Mills, Edw., Fairfield M. C. (N. Y.), '39.
West Burlington—
Carrier, Chas. W., Uni. Buffalo, '62.
Wysox—
Reed, Chas. H., J. M. C., '80.

BUCKS COUNTY.

Officers.

President,	A. M. Cooper,	Point Pleasant.
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Treasurer,	G. R. McCoy,	Doylestown.

Members.

Buckingham—
Foulke, Joseph, Uni. Pa., '54.
Centre Hill—
Walter, Joseph B., Uni. Pa., '68.
Doylestown—
McCoy, G. R., Uni. Pa., '40.
Swartzlander, Frank, Uni. Pa., '63.
Hartsville—
Doughty, Wm. E., Uni. Pa., '68.
Hilltown—
Kratz, Harvey, Uni. Pa, '62.
Plumsteadville—
Krause, J. H., Starling M. C., Ohio, '72.
Point Pleasant—
Cooper, A. M., Jeff. M. C., '56.

BUTLER COUNTY.

Officers.

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Vice-President,	S. Graham,	Butler.
Secretary and Treasurer,	J. L. Christy,	Connoquenessing.

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McCasky—C. A.
Breakneck—Brooks, Floyd V.
Breakneck—Davis, L. G.
Irwin, Wm.
Kersting, Theo.

Brownsdale—Campbell, C. S.
Butler—Bredin, Stephen
Byers, John E.
Graham, Samuel
Neyman, A. M.
Pillow, R. H.
Connoquenessing—Christie, J. L.
Harmony—Lusk, Jos. S.
Jacksville—Cowden, W. B.
Karn's City—Harper, David
North Hope—Henlen, B. A.
Hoover, N. M.
Portersville—Wilson, H. R.
Wilson, W. R.
Saxonsburg—King, J. H..
Whitestown—Clark, W. N.
Zelienople—Lusk, Amos

CAMERON COUNTY.

OFFICERS.

President,	W. H. Delong,	Emporium.
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Treasurer,	R. P. Heilman,	"

MEMBERS.

Coudersport (Potter Co.)—
French, C. S., Coll. P. & S. Balt., '79.
Driftwood—
Smith, S. S., Rush M. C. (Chicago), '69.
Torbert, E. G., Jeff. M. C.,'79.
Driftwood—
Torbert, J. S., Jeff. M. C., '81.
Emporium—
Bardwell, E. O., Uni. Buffalo, '78.
DeLong, W. H., Albany M. C., '66.
Heilman, R. P., Jeff. M. C., '76.

CARBON COUNTY.

OFFICERS.

President,	J. G. Zern,	Weissport.
Vice-President,	R. Leonard,	Mauch Chunk.
Secretary,	J. B. Tweedle,	Weatherly.
Treasurer,	H. DeYoung,	Mauch Chunk.

MEMBERS.

Buck Mountain—Prevost, L. W.
Lansford—Davis, B. H.
Lehighton—Derhamer, W. A.
Horn, C. T.
Lehigh Tannery—Holcomb, J. T.
Mahoning—Keiser, P. D.
Mauch Chunk (East)—Bowman, J.
DeYoung, H.
Mauch Chunk (East)—
Horn, J.
Leonard, R.
Parryville—Kutz, W. L.
Weatherly—Hoffman, C. J.
Latham, P. H.
Tweedle, J. B.
Weissport—Zern, J. G.

CENTRE COUNTY.

OFFICERS.

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Vice-Presidents,	J. F. Woods,	Boalsburg.
	E. W. Hale,	Bellefonte.
Secretary and Treasurer,	J. Y. Dale,	Lemont.

MEMBERS.

Aaronsburg—
Musser, C. S., J. M. C., '80.
Musser, P. T., J. M. C., '53.
Bellefonte—
Dorworth, E. S., Univ. N. Y. '65, & Pa. '74.
Hale, E. W., Univ. Pa., '48.
Harris, George F., Univ. Pa., '64.
Hayes, Thos. R., Chicago M. C., '64.
Hibler, Augustus, Univ. Freiburg, '53.
Boalsburg—
Woods, John F., J. M. C.,'71.
Centre Hall—
Alexander, J. F., Univ. Wooster, '74.
Centre Hall—
Jacobs, W. A., Univ. Pa., '75.
Fleming—
Blair, J. M., Univ. Pa., '54,
Cambridge, C. H., Univ. N. Y., '77.
Lemont—Dale, J. Y., Univ. Pa.,'63.
Millheim—Mingle, D. H., J. M. C., '71.
Pine Grove Mills—
Smith, J. R. 38 years' practice.
Snow Shoe—
Thompson, J. A., J. M. C., '78.
Spring Mills—
Van Valzah, F. H., J. M. C.,'70.
Stormstown—
Kline, G. W., Univ. Pa., '82.
Zion—Fisher, P. S., Univ. Pa., '68.

CHESTER COUNTY.

OFFICERS.

President,	Ephraim Hopkins,	Marshalton.
Vice-Presidents,	Sumner Stebbins,	Dugdale.
	Thos. D. Ingram,	West Chester.
Recording Secretary,	Edw. Jackson,	"
Corresponding Secretary,	Wm. R. Perdue,	Unionville.
Treasurer,	Chas. E. Woodward,	West Chester.

MEMBERS.

Atglen—
Pownall, Howard W., Jeff. M. C., '79.
Brandywine Manor—
Thompson, N. G., Phila. Col. of Med., '52.
Cains (Lancaster Co.)—Swing, E. V.
Coatesville—
Spratt, Geo. R., Uni. Pa., '64.
Swing, E. V., Uni. Pa., '67.
Dugdale—
Stebbins, Sumner, Uni. Pa., '31.
Glen Lock—
Carey, R. B., Uni. Mich., '71.
Honey Brook—
Treichler, C. Galen, Uni. Pa., '65.
Kennett Square—
Price, Henry R., Uni. Pa., '80.
Landenburg—
Thompson, Benj., Penna. M. C., '51.
Lewisburg (Union Co.)—
Groff, G. G., Long Island Coll. Hosp., '77.
London Grove—
Stubbs, Jos. H., Jeff. M. C., '72.
Marshallton—
Hopkins, Ephraim, Uni. Md., '59.
Milltown—
Hoskins, Percy, Jeff. M. C., '75.
New London—
Fulton, James, Jeff. M. C., '59.
Oxford—
Houston, J. Willis, Jeff. M. C., '57.
Pomeroy—
Taylor, Thos. A., Jeff. M. C., '72.

Unionville—
Perdue, Wm. R., Uni. Pa.'74.,
West Chester—
Brinton, Wm. B., Uni. Pa., '63.
Ingram, Thos. D., Jeff. M. C., '75.
Jackson, Edw., Uni. Pa., '78.
Massey, Isaac, Jeff. M. C., '64.
West Chester—
Price, Jacob, Jeff. M. C., '50.
Rothrock, J. T., Uni. Pa., '68.
Woodward, Chas. E., Uni. Pa. '74.
West Grove—Ewing, R. B., Uni. Pa., '65.
West Whitehead—
Patrick, Elwood, Uni. Pa., '80.

CLARION COUNTY.

Officers.

President,	G. G. Shoemaker,	Church P. O.
Vice-President,	A. M. Reid,	Clarion.
Secretary,	Jos. W. Leadenham,	Knox P. O.
Treasurer,	Jas. Ross,	Clarion.

Members.

Callensburg—
Meals, N. M., W. R. M. C., '74.
Meals, S. D., W. R. M. C., '72.
Church P. O.—
Shoemaker, Geo. G., Uni. Pa., '76.
Clarion—
Reid, A. M., Uni. Mich., '78.
Ross, James, Uni. Pa., '53.
Ross, J. F., Uni. Pa., '68.
Edenburg (Knox P. O.)—
Leadenham, Jos. W., L. I. H. C., '76.
Lamartine—
Clover, W. M., Eclectic Med. Inst. Cinci., '57.
Fitzgerald, J. M., W. R. M.C.
New Bethlehem—
Criswell, John, 16 yrs. practice.
McLina, C.,
Randall, W., Cinci. C. M. & S. '76.
Wick, A. J., J. M. C., '70.
Parker—Goheen, B. F.
Sligo—Beck, J. N., 13 yrs. practice.
McCauley, A., J. M. C., '78.
Strattonville—
Barber, J. H., 35 yrs. practice.
St. Petersburg—
Foster, Wm., Uni. Buffalo, '65.
McComb, S. F., J. M. C. '79.
Wireback, J. J., Uni. Pa., '66.
West Freedom—
McAnich, D. L., J. M. C., '79.

CLEARFIELD COUNTY.

Officers.

President,	D. A. Hogue,	Houtzdale.
Vice-President,	S. C. Stewart,	Clearfield.
Secretary and Treasurer,	H. B. Van Valzah.	Clearfield.

Members.

Clearfield—
Burchfield, J. P., Uni. Mich., '62.
Hartswick, J. G., Uni. Pa., '54.
Stewart, S. C., J. M. C., '81.
Van Valzah, H. B., J. M. C. '73.
Curwensville—
Winslow, R., J. M. C., '79.
Du Bois—
Means, W. A. (not registered).
Petigrew, L. H. (not registered).

Du Bois—
Smathers, W. J., J. M. C., '73.
Houtzdale—
Houge, D. A., J. M. C. '75.
Vaughan, J. E. (not registered).
Whittier, G. M., Bellevue, '75.
Luthersburg—
Spackman, R. V., J. M. C., '70.
Osceola—Read, F. B., J. M. C., '67.
Philipsburg—Allport, Herbert.
Williamsgrove—
Tobin, Thos., Buffalo Uni., '82.

CRAWFORD COUNTY.

Officers.

President,	Wm. Varian,	Titusville.
Vice-President,	E. H. Dewey,	Meadville.
Secretary and Treasurer,	Theo. J. Young,	Titusville.
Cor. Secretary,	A. F. Rhodes,	Meadville.

Members.

Centreville—Clark, L. G.
Cochranton—Hassler, Jas. P.
Hydetown—
Baker, W. A., Cleve. M.C., '67.
Meadville—Best, David
Calvin, D. M.
Dewey, E. H.
Eagleson, J. S.
Rhoads, Miss A. F., W. M. C., Philadelphia, '79.
Mosiertown—Doty, L. L.
Spartansburg—
Waid, A. P., Uni. Buffalo, '74.
Titusville—
Barr, Geo. W., Uni. Buffalo, '56.
Moody, George O., Dartmouth Med. Dept., '62.
Varian, Wm., Penna. M. C., '54.
Young, Theo. J., Uni. Pa., '68.
Townville—
Farrelly, Ellis M., Ky. Sch. Med., '64.

CUMBERLAND COUNTY.

Officers.

President,	C. A. Howland,	Shippensburg.
Vice-President,	R. L. Sibbet,	Carlisle.
Recording Secretary,	T. Stewart, Jr.,	"
Corresponding Secretary,	G. W. Ziegler,	"
Treasurer,	S. P. Ziegler,	"

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Allen—Koons, P. R., Jeff. M. C., '79.
Big Spring—
Grove, Geo., Jeff. M. C., '36.
Camp Hill—
Bowman, J. W., Jeff. M. C., '77.
Carlisle—Bixler, J. R., Jeff. M. C., '66.
Dale, W. W., Jeff. M. C., '38.
Herman, A. J., Uni. Pa., '46.
Keiffer, S. B , Uni. Pa., '51.
Krise, C. W., Uni. Md., '71.
Reily, W. F., Uni. Pa., '75.
Carlisle—
Sibbet, R. Lowry, Uni. Pa., '59.
Stewart, Thomas, Sr., Western Reserve M. C., Ohio, '57.
Stewart, Thomas, Jr., Western Reserve M. C., Ohio, '74.
Ziegler, G. W., Uni. Pa., '74.
Ziegler, S. P., Jeff. M. C., '45.
Dickinson—
Longsdorff, W. H., Jeff. M. C., '56.

Lisburn—
Trimmer, J. W., Rush M. C., Chicago, '75; Bellev. Hosp. M. C., '76.
Mechanicsburg—
Brandt, E. B., Jeff M. C., '55.
Hummel, C. C., Jeff. M. C., '77.
Lenher, L. H., Pa. M. C., '43.
Long, R. P., Jeff. M. C., '78.
Mosser, E. N., Jeff. M. C., '70.
Short, R. N., Miami M. C., Cin., '71.
Mt. Holly Springs—Lauman, W. H.
New Cumberland—
Roop, J. W., Uni. Pa., '68.
New Kingston—
Fulk, Levi, Bellev. Hosp. M. C., '74.
Newville—
Brehm, S. H., Jeff. M. C., '66.
Newville—
Claudy, J. C., Bellev. Hosp. M. C., '65.
Stewart, W. G., Western Res. M. C., '62.
Plainfield—
Van Camp, J. E., Uni. Mich, '70.
Sheppardstown—
Boyer, J. H., Jeff. M. C., '78.
Shiremanstown—
Bruckart, W. S., Jeff. M. C., '70.
Shippensburg—
Hayes, D. D., Uni. Pa , '69.
Howland, C. A., Uni. Mich., '54.
Stewart, R. C., Uni. Pa., '72.
Witherspoon, W. M., Uni. Pa., '69.
Siddonsburgh (York Co.)—
Prowel, W. R.

DAUPHIN COUNTY.

Officers.

President,	E. H. Coover,	Harrisburg.
Vice-Presidents,	F. W. Coover,	"
	S. R. Gorgas,	"
Secretary,	Paul A. Hartman,	"
Treasurer,	C. C. Seabrook,	"

Members.

Churchville—Putt, M. O., Uni. Pa., '73.
Dauphin—
Umberger, J. R., Phila. M.C., '52.
Halifax—Bischoff, H. W., Uni. Pa., '66.
Harrisburg—
Bishop, W. T., Rush M. C., '79.
Bowman, J. D., J. M. C., '56.
Cleaves, Margaret A., Iowa St. Uni., '56.
Coover, D. H., J. M. C., '74.
Coover, E. H., J. M. C., '50.
Coover, F. W., Uni. Pa., '75.
Coover, J. H., J. M. C., '63.
Coover, W. H., J. M. C., '57.
Crisswell, J. T., J. M. C., '72.
Duff, W. L., Ohio M. C., '74.
Dunott, Thos. J., J. M. C., '52.
Ellenberger, J. W., J. M. C., '79.
Harrisburg—
Fager, C. M., Uni. Pa., '81.
Fritchey, J. A., Uni. Pa., '79.
Garver, Jane K., Woman's M. C., '72.
Gerhard, J. Z., Uni. Pa., '68.
Gorgas, S. R., J. M. C., '74.
Hamilton, Hugh, Uni. Pa., '71.
Hartman, Paul A., J. M. C., '74.
Hay, J. W., Uni. Pa., '71.
Herr, F. C., J. M. C., '79.
Hursh, Geo. R., J. M. C., '57.
Hutton, J. C., Uni. Pa., '67.
Kemp, Agnes, Wom. M. C., '79.
McGowan, H., Uni. Pa., '68.
Meals, E. S.
Orth, H. L., Uni. Pa., '66.
Rahter, C. A., L. I. C. H., '64.

Harrisburg—
Reilly, Geo. W., Uni. Pa., '57.
Seabrook, C. C., Uni. Pa., '78.
Seiler, J. P., Uni. Pa., '65.
Smith, J. K., J. M. C., '75.
Stahley, Geo. D., Uni. Pa., '75.
Walker, H. B., J. M. C., '51.
Witman, H. O., J. M. C., '81.
Hummelstown—
Rupp, H., Uni. Pa., '61.
Linglestown—
Smith, Chas. H., Uni. Pa., '72.
Lykens—
Myers, H. K., Uni. Md., '67.
Middletown—
Beane, W. H., J. M. C., '62.
Middletown—
Mish, Geo. F., Uni. Pa., '53.
Millersburg—
Bowman, J. F., J. M. C., '65.
Steelton—
Saul, Chas. H., Uni. Pa., '78.
Seibert, W. H., Uni. Pa., '74.
Traver, D. B., J. M. C., '69.
Union Deposit—
Keller, D. C., 30 years' prac.
Wiconisco—
Schofield, E. Lane, Uni. Pa., '67.
Williamstown—
Matter, G. F., J. M. C., '66.
McGill, Peter, Uni. Pa., '79.
Park, J. W., J. M. C., '78.

DELAWARE COUNTY.

Officers.

President,	Samuel Trimble,	Lima.
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Members.

Chester—
Allen, John M. (Hon'ary.)
De Lannoy, C. W., J. M. C., '81.
Forwood, J. F. M., Uni. Pa., '66.
Graham, T. Ridgely, Jeff. M. C., '50.
Harvey, Elwood, Uni. Pa., '43.
Jefferis, D. W., Uni. Pa., '65.
Milner, R. H., Uni. Pa., '68.
Rose, David, Penna. M. C., '46.
Ulrich, Wm. B., Phila. C. of M., '50, and New Orleans School of Med., '66.
Weston, John B., Uni. Pa., '78.
Clifton Heights—
Bartleson, S. P., J. M. C., '54.
Given, Robert A.
Phillips, J. Willoughby, Royal Coll. Surg., Eng., '74.
Concordville—
Darlington, Hillborn, Uni. Pa., '41.
Darlington, Horace H., Uni. Pa., '79.
Elwyn—Fish, W. B., Albany M.C., '79.
Kerlin, Isaac N., Uni. Pa., '56.
Fernwood—
Bartleson, H. C., J. M. C., '70.
Lenni—
Murray, F. Marion, J. M. C., '77.
Lima—
Trimble, Samuel, Uni. Pa., '67.
Lovells—
Egbert, Jos. Crawford, Uni. Pa., '80.
Media—
Baker, Frances N., W. M. C., '77.
Dickeson, W. T. W., Uni. Pa., '49.
Fussell, Linnæus, Uni. Pa., '67.
Stellwagen, T. C. (Hon'ary.)
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Ridley Park—
Partridge, C. L., J. M. C., '74.
Sharon Hill—
Longstreth, M. Fisher, Uni. Pa., '56.
Thornton—
Hornor, Joseph H., J. M. C., '74.
Upland—Bullock, L. M., J. M. C., '81.
Wallingford—
Carter, Chas. (Honorary.)

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Free, Spencer M., Coll. Phys. and Surg. Balt., '80.
Williams, T. R., Coll. Phys. and Surg. Balt., '82.
Kersey—
Straessley, H., Uni. Tubingen, '46.
Ridgway—Williams, W. L., Uni. City N. Y., '72.
St. Mary's—Hartman, William B., Penna. M. C., '56.
Russ, Eben J., National M. C., '61.
Wilson, C. G., Jeff. M. C., '74.
Wilcox—Ernhout, E. L., Bellevue Hosp. M. C., '79.

ERIE COUNTY.

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Kibler, C. B., Uni. Buffalo, '70.
Mackrees, H. O., Uni. Buffalo, '67.
Pickett, M., Uni. Buffalo, '69.
Erie—Brandes, C., 37 years' practice.
Clarke, J. T., Nat. M. C., '70.
Evans, W. C., W. R. M. C., '54.
Lovett, A. S., Ann Arbor Uni., '71.
Randall, A. Z., Ann Arbor Uni., '64.
Silliman, J. E., J. M. C., '74.
Spencer, H. A., W. R. M. C., '51.
Erie—
Stewart, J. L., Uni. Pa., '48.
Stranahan, C. W., J. M. C., '67.
Thayer, A., 37 years' practice.
Woods, A. A., Miami M. C., '76.
Girard—Taylor, I. N., Uni. Pa., '66.
McKean—
Waggoner, D. R., Ohio M. C., '71.
North East—
Griffin, J. K., Uni. Buffalo, '65.
Loop, D. D., Uni. Buffalo, '65.
Wattsburg—
Thickstun, G., Bellevue H. M. C., '64.

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Hazlett, Isaac C., Uni. Pa., '70.
Van Voorhis, J. S., Jeff. M. C., '47.
Worrell, J. W., Uni. Pa., '81.
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Brownsville—
Duncan, Wm. S., Uni. Pa., '58.
Grooms, J. B.
Jackson, Isaac, Jeff. M. C., '47.
Nelan, J. R., Uni. Pa., '77.
Reichard, C. C., North Western Uni., Chicago, '70.
Shoemaker, B., Uni. Pa., '70.
Connellsville—
Buttermore, Smith, 12 years' practice.
Philip, Ellis, Jeff. M. C., '67.
Singer, J. J., Jeff. M. C., '69.
Dunbar—
Clarke, R. W., Uni. Mich , '71.
Sheplar, J. T., Bellevue Hosp. M. C., '74.
Geneva—
Greene, Wilson, 22 years' practice.
Masontown—
Neff, Geo. W., Jeff. M. C., '70.
Sangster, J. P., Charity Hosp. M. C., Cleveland, '68.
Merrittstown—
Eastman, H., not registered.
Perryopolis—
Davidson, J. H., Western Reserve M. C., '70.
Smithfield—
Mathiot, H. B., Jeff. M. C., '52.
Uniontown—
Ewing, Jas. B., Jeff. M.C., '66.
Fuller, Smith, Jeff. M. C., '47.
Gaddis, Levi S., Jeff. M. C., '73.
Robinson, F. C., Jeff. M. C., '51.
Sturgeon, Wm. H., 21 years' practice.

FRANKLIN COUNTY.

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Chambersburg—
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Hull, Geo. S., Uni. Pa., '76.
Lane, S. G., Uni. Pa., '49.
McLanahan, T. J., J. M. C., '65.
Merklein, C. H., Uni. Pa., '70.
Montgomery, John, Jeff. M. C., '58.
Palmer, Chas., Uni. Pa., '78.
Seibert, John P., Jeff. M. C., '75.
Sensenny, E. N., Jeff. M. C., '70.
Chambersburg—
Suesserott, J. L., Jeff. M. C., '81.
Suesserott, L. F., Uni. Pa., '79.
Dry Run—
Hinchman, W. A., Uni. Md., '73.
Fannettsburg—
Flickenger, J. H., Penna. M. C., '51.
Fayetteville—Hartzell, E., Penna. M. C., '47.
Greencastle—Gilland, J. C., Jeff. M. C., '76.

Green Village—
Maclay, David, Uni. Pa.,'75.
Harrisburg (Dauphin Co.)—
Walker, T. H., Penn. M. C., '69.
Mercersburg—
Unger, D. F., Bellevue Hosp. M. C., '66.
Saint Thomas—
Ramsay, R.W., Jeff. M. C.,'74.
Van Tries, J. M. (Retired.)
Sylvan—Gerry, M. M., Uni. Md., '46.
Upper Strasburg—
Gelwix, J. M., Jeff. M. C.,'66.
Hunter, W. A., over 10 years' practice.
Upton—Noble, W. P., Jeff. M. C., '69.
Waynesboro'—
Amberson, J. B., Uni. Pa., '68.
Snively, I. N., Jeff. M. C., '63.
Welsh Run—
Chritzman, H. G., Penna. M. C., '59.

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Vice-President,	J. S. Gallaher,	Mount Union.
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Brumbaugh, A. B., Uni. Pa., '66.
Miller, D. P., J. M. C., '64.
Mount Union—
Gallaher, John S., Uni. Pa., '70.
Orbisonia—
James, Geo. W. C., Uni. Pa.,'54.
Robertsdale—
Crewitt, Jno. A., C. P. & S., Balt., '76.

INDIANA COUNTY.

Officers.

President,	W. T. Larimer,	West Lebanon.
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Secretary,	N. Frank Ehrenfeld,	"
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Members.

Blacklick—
Wiggins, S. L., J. M. C., '73.
Blairsville—
Clagett, L. S., J. M. C., '77.
Hughes, J. W., Cinci. C. M. & S., '63.
Rutledge, S. R., J. M. C., '70.
Indiana—
Anderson, Wm., J. M. C., '52.
Ehrenfeld, N. F., Uni. Pa., '80.
Purington, A. F., Bowdoin C., '62.
Torrence, J. M., J. M. C., '73.
Jacksonville—Cunningham, W. N.
Penn Run—
Cameron, Morris, J. M. C., '80.
McMullen, Thos., J. M. C., '56.
Saltsburg—
Ansley, Thos. B., J. M. C., '67.
Carson, Thos., J. M. C., '65.
Shelocta—McChesney, R.
McChesney, W. A., Cinci. C. M. & S., '77.
Marland, T. J.
West Lebanon—
Larimer, W. T., J. M. C., '79.

JEFFERSON COUNTY.

Officers.

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Vice-President,	M. M. Rankin,	Rockdale Mills.
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Corresponding Secretary,	W. F. Matson,	"
Treasurer,	R. B. Brown,	Summerville.

Members.

Allegheny (Allegheny Co.)—
McKibbon, J. A., Bellevue H. M. C., '79.

Big Run—
Cox, A. P., Cinci. M. C., '77.

Brookville—
Balmer, A. F., J. M. C., '75.
Lawson, T. C., J. M. C., '71.
Matson, C. M., 24 y'rs practice.
Matson, W. F., Cleveland M. C., '77.

Limestone (Clarion Co.)—
Johnson, S. C., J. M. C., '79.

Millville (Clarion Co.)—
Henry, J. A., Keokuk M. C.

New Bethlehem (Clarion Co.)—
Paine, D. L., M. C. Columbus, Ohio.

Punxsutawney—
Beyer, W. F., J. M. C., '79.
Hamilton, S. S., M. C. Columbus, '78.

Reynoldsville—
Alexander, W. B., J. M. C., '68.
Boyles, R. M., Cleveland M. C., '77.
Foust, J. W., 15 y'rs practice.
Gibson, W. M. B., 11 y'rs practice.
King, J. C.

Richardsville—
Hilliard, G. R., J. M. C., '72.

Ridgway (Elk Co.)—
Thompson, John, St. Louis M. C.

Rockdale Mills—
Rankin, M. M., Ohio M. C., '76.

Stanton—
Woods, W. W., J. M. C., '77.

Summerville—
Brown, R. B., Ohio M. C., '52.

LANCASTER COUNTY.

Officers.

President,	J. H. Musser,	Lampeter.
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	R. M. Bolenius,	Lancaster.
Recording Secretary,	William Blackwood,	"
Corresponding Secretary,	T. B. Cox,	"
Treasurer,	J. Aug. Ehler,	"

Members.

Akron—
Brubaker, A. S., Uni. Pa., '77.

Annville (Lebanon Co.)—
Trabert, J. W., J. M. C., '70.

Bainbridge—
Bean, G. W., J. M. C., '66.
Weseman, Geo. T., Uni. Gottingen, '47.

Bethesda—Yost, J. F., J. M. C., '67.
Bird in-Hand—
Miller, A. M., Penna. M. C., '58.
Buck—Deaver, J. M., Uni. Md., '43.
Christiana—Plank, E., J. M. C., '70.
Churchton—
Irwin, W. B., J. M. C., '79.
Clay—Kline, J. Y., Uni. Pa., '74.
Columbia—
Berntheizel, G. W., J. M. C., '66.
Bockius, S. A., Penna. M. C., '61.
Bruner, D. J., Uni. Pa., '30.
Cotterell, J. F. (not registered).
Craig—Alex., J. M. C., '65.
Kay, T. M., College P. & S., Balt., '79.
Lineaweaver, J. K., J. M. C., '61.
McBride, J. B., Uni. Pa., '63.
Righter, W. (not registered).
Conestoga Centre—
Clinger, P. S., Wash. Uni. Balt., '42.
Mowery, J. L., J. M. C., '78.
Earlville—
Horst, M. W., Uni. Pa., '61.
Elizabethtown—
Treichler, A. C., J. M. C., '69.
Ephrata—Lightner, J. M., Cinci. C. P. & S., '73.
McCaa, D. J., J. M. C., '67.
Farmersville—
Shaeffer, J. F., J. M. C., '79.
Gap—Parke, A. G. B., Univ. Pa., '66.
Goodville—
Witmer, J. M., J. M. C., '81.
Greene—Glacken, M., Uni. Md., '59.
Hinkletown—
Reimsnyder, B. J., Uni. Pa., '74.
Intercourse—
Smith, W. H., J. M. C., '77.
Kirkwood—
Wentz, L. H., J. M. C., '74.
Lampeter—Musser, J. H., J. M. C., '66.
Lancaster—
Albright, F. G., Uni. Pa., '51.
Atlee, John L., Sr., Uni. Pa., '20.
Lancaster—
Atlee, John L., Jr., Uni. Pa., '53.
Blackwood, Wm., J. M. C., '49.
Bolenius, R. M., Uni. Md., '73.
Carpenter, Henry, Penna. M. C., '41.
Compton, Wm., Phila. M. C., '53.
Cox, T. B., J. M. C., '79.
Davis, S. T., L. I. C. H., '65.
Davis, M. L., Bellevue H. M. C., '70.
Ehler, J. Aug., Penna. M. C., '41.
Foreman, S. B., J. M. C., '76.
Herr, A. J., J. M. C., '61.
Herr, M. L., Uni. Nashville, '66.
Musser, F. M., J. M. C., '70.
Muhlenberg, H. E., Uni. Pa., '71.
Roland, O., Uni. Pa., '75.
Shirk, J. M., J. M. C., '79.
Stehman, H. B., J. M. C., '76.
Urbans, B. F. W., J. M. C., '69.
Welchans, G. R., Uni. Pa., '67.
Leaman Place—
Leaman, Brainard, J. M. C., '64.
Lincoln—
Charles, Jacob, L. I. M. C., '69.
Litiz—
Brobst, J. C., Bellevue M. C., '67.
Hertz, J. K., Phila. M. C., '60.
Kreiter, J. S., Bellevue H. M. C., '82.
Roebuck, P. J., Uni. Pa., '60.
Shenk, J. H., Uni. Pa., '61.
Little Britain—
Zell, I., Penna. M. C., '56.
Manheim—Dunlap, J. F., J. M. C., '75.
Marietta—
Alexander, H. M., Uni. Pa., '76.
Norris, H. E., Uni. Md., '74.
Martinsville—
Bryson, L. M., J. M. C., '79.
Mastersonville—
Thorne, W. B., Uni. Pa., '76.
Thorne, J. S.
Millersville—Herr, B. F., J. M. C., '77.

Mt. Joy—Heistand, A. M.
Newpher, J. L., Bellevue H. M. C., '81.
Sheller, A., not registered.
Ziegler, J. L., J. M. C., '44.
Ziegler, J. P., Uni. Pa., '80.
Mountville—
Livingston, T. M., Bellevue H. M. C., '72.
New Holland—
Bushong, I., J. M. C., '61.
Kohler, J. W., Uni. Pa., '73.
New Providence—
Wentz, W. J., J. M. C., '65.
Oregon—Dillman, J., J. M. C., '76.
Paradise—
Hershey, E. R., J. M. C., '80.
Smith, A. H., J. M. C., '78.
Quarryville—
Rhoher, T., J. M. C., '81.
Reamstown—Trabert, J. W.
Rohrerstown—
Shenk, D. K., L. I. C. H., '74.
Salunga—Kendig, B., Uni. N. Y., '74.
Soudersburg—
Davis, J. H., J. M. C., '58.
Strasburg—Black, H. M., J. M. C., '75.
Brackbill, Jos., Uni. Pa., '69.
Keneagy, Sam'l, J. M. C., '44.
Musser, M. B., J. M. C., '46.
Weaver, J. G., J. M. C., '65.
Union Station—
Bleiler, P. O., J. M. C., '76.
Wrightsville (York Co.)—
Thompson, J. A., J. M. C., '52.
Willowstreet—
Mayer, I. H., J. M. C., '69.
Witmer—Musser, H. E., J. M. C., '75.
Sensenig, J. D., Bellevue H. M. C., '69.

LEHIGH COUNTY.

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Martin, A. J., Uni. Pa., '57.
Martin, E. G., Uni. Pa., '56.
Martin, Thos., Uni. Pa., '77.
Reichard, P. L., J. M. C., '65.
Young, Samuel, 20 years' practice.
Alburtis—
Beaver, Eugene, J. M. C., '72.
Catasauqua—
Hornbeck, M. E., Uni. N. Y., '65.
Keim, C. J., Uni. Pa., 75.
Centre Valley—Erdman, F. C.
Copley—Horn, H., J. M. C., '79.
East Texas—Miller, J. M.
Lynnville—
Seiberling, F. C., Uni. N. Y., '62.
Macungie—
Erdman, J. D., Uni. Pa., '72.
Erdman, W. B., Uni. Pa., '60.
Steinesville—
Graver, J. D., Bellevue, '72.

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Kingston—Corss, Fred.
Mill Hollow—Faulds, W. H.
Muhlenburg—Hice, E. C.
Nanticoke—Davenport, B. H. R.
Davies, B. H.
Holly, S. L.
Pittston—Rice, J. N.
Troxell, E. R.
Underwood, G.
Walsh, J. J.
Plains—Barton, A. A.
Brooks, Jas.
Shive, P. C.
Plymouth—Jones, Jno. H.
Shickshinny—Hughes, M. B.
Upper Lehigh—Mays, T. J
White Haven—Trimmer, S. W.
Wilkesbarre—Bulkeley, J. E.
Cressler, John M.
Crawford, J. B.
Davis, R.
Guthrie, G. W.
Hakes, Harry.
Harvey, O. F.
Mayer, E. R.
Murphy, J. A.
Ross, I. E.
Taylor, L. H.
Weaver, W. G.
Wyoming—Knapp, Chas. P.

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	E. D. Lumley,	"
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English Centre—Belcher, C. E.
Hughesville—Hill, Geo.
Jersey Shore—Dwight, M. B.
Pfouts, G. I.
Tomlinson, H. A.
Lock Haven (Centre Co.)—
Armstrong, R.
Montoursville—McCormick, H. G.
Saeger, Geo. C.
Tomlinson, Jno.
Montgomery Station—Hull, A. P.
Renovo—Weymouth, W. C.
Williamsport—Burrell, J. L. A.
Campbell, E. B.
Church, Rita B.
Detwiler, B. H.

Williamsport—
Detwiler, T. C.
Helsby, T. H.
Hepburn, W. M.
Hill, G. A.
Hull, W. R.
Lumley, E. D.
Lyon, Chas.
Lyon, Edw.
Lyon, Thos.
Nutt, G. D.
Richter, A.
Saylor, Jean
Weisel, Geo.

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Bradford—Buss, C. D.
Dorand, W. R.
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Elliott, J. C.
Follett, F. M.
Groves, A. F.
Hand, W. R.
Malloy, J. D.
Matteson, D. E.
Murdoch, F. H.
Shoemaker, W. P.
Sweet, K A.
Sweet, N.
Wallace, J. A.
Williams, A. M.
Wilson, Henry.
Wright, Olin S.
Wykoff, G. S.
Custar City—Shuey, J. H.
Streeter, Wm.
Dallas City—Ford, Sidney E.
Duke Centre—Baker, A. R.
Conners, W. F.
Ross, T. D.
Weaver, G. W.
Eldred—Morris, J. E. K.
Gillmer—Canfield, H. A.
Kendall—Benninghoff, G. E.
Port Allegheny—Otto, J. V.
Stearns, J. S.
Red Rock—Egbert, R. A.
Rixford—Gumaer, C. H.
Smethport—Brown, E. G.
Carroll, Thos. A.
McCoy, Henry L.

MERCER COUNTY.

Officers.

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MEMBERS.

Clarkville—
Tidd, E. J., Uni. Mich., '70.
Greenville—
Clark, A. T., Uni. Mich., '61.
Greenville—
Leet, F. H., Cleve. M. C., '58.
Mossman, B. E., W. R. M. C., '64.
Hadley—
Jackson, T. M., Cinci. C. M. & S., '74.
Jackson Center—
McElrath, J. B., J. M. C., '71.
Mercer—
Hope, R. M., Cinci. Coll., '74.
Hosack, J. P., J. M. C., '49.
Mehard, J. W., J. M. C , '79.
Mehard, S. S., J. M. C., '47.
Pardoe—
Meyer, L. G., J. M. C., '74.
Sandy Lake—
Fulton, T. H., Cleveland M. C., '52.
Geibner, E. X., Harvard Uni., '53.
Sharon—
Bishop, H. M., C. P. & S. N. Y., '69.
Griswold, E., J. M. C., '53.
Hazen, S. A., Uni. N. Y., '78.
Heilman, S., J. M. C., '71.
Reed, J. H., Miami M. C., '78.
Sullivan, Thos., Trinity Uni., Canada, '81.
Sharpsville—
Rhea, A. R., W. R. M C., '80.
Twitmyre, J. H., Uni. Pa., '82.
Stoneboro—
Cristler, J. H., Rush M. C., '73.
Transfer—
Shult, J..F.,C. P. & S.,Balt.,'80.
West Middlesex—
Hillier, J. W., Uni. Pa., '60.
Livingston, J. B., W. R. M. C., '56.
Wheatland—
Woods, L. N., Uni. Buffalo,'72.
Worth—Elliott, Thos., J. M. C., '70.

MIFFLIN COUNTY.

OFFICERS.

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Belleville—
Floyd, J. B., Jeff. M. C. '73.
Lewistown—
Campbell, R. A., St. Louis M. C.
Hurlbut, C. S., Uni. Buffalo.
Madden, W. S., Jeff. M. C., '76.
Marks, John J.
McKim, V. I., Uni. Louisville.
Parcels, Wm. H., M. C. Ohio.
Sheaffer, A. H., Uni. Pa., '67.
McVeytown—
Brown, Jas. M., Jeff. M. C.,'75.
Rothrock, A., Uni. Pa., '35.
Milroy—Harshberger, A., Jeff. M. C.
Harshberger, A. S., Uni. Pa., 70.
Mewton Hamilton—
Mahon, Jos. T., Uni. Md.
Readsville—
Harman, G. G., Jeff. M. C., '80.

MONTGOMERY COUNTY.

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	Alice Bennett,	Norristown.
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Ardmore—Anderson, Jos. W., J. M. C.
Smith, Samuel S.
Bridgeport—Mann, Chas., J. M. C.
Bryn Mawr—Sargent, G. P., L. I. C. H.
Savery, Wm., Uni. Pa.
Centre Point—
Meschter, G. K., Uni. Pa.
Centre Square—Seiple, S. C., Uni. Pa.
Conshohocken—
Beaver, D. R., Uni. Pa.
Highley, G. N., Uni. Pa.
Reid, J K., Penna. M. C.
Stiles, Geo., Uni. Pa.
Evansburg—Umstead, R., J. M. C.
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Arnold, H., J. M. C.
Hatboro'—Evans, I. Newton, J. M. C.
Jeffersonville—Schrack, David, J.M.C.
Shrack, Jno., J. M. C.
Lansdale—Andrews, R. H., Uni. Pa.
Little Oley (Berks)—Nieman, H. Y.
Lower Merion—Winters, Jos., J. M. C.
Mingo—McKenzie, W., Uni. Pa.
Norristown—
Bennett, Alice, Wom. M. C., Phila.
Bradley, Chas., J. M. C.
Norristown—
Chase, R. H., Uni. Pa.
Corson, Ellwood M., Uni. Pa.
Drake, H. H., J. M. C.
Corson, Wm., Uni. Pa.
Eisenberg, P. Y., Uni. Pa.
Knipe, J. O., J. M. C.
Kugler, Annie, W. M. C. Phila.
Read, L. W., Uni. Pa.
Stinson, Mary.
Tyson, A. R., J. M. C.
Weaver, J. K., J. M. C.
Weber, Chas. Z., J. M. C.
Wiley, S. N., J. M. C.
Whitcomb, H. H., Uni. Pa.
Plymouth Meeting—
Corson, Hiram, Uni. Pa.
Leedom, E. C., Uni. Pa.
Pottstown—
Davis, Jno., Eclectic M. C., Phila.
Royer's Ford—Morey, J., Uni. Pa.
Skippackville—
Wolfe, Samuel, Uni. Pa.
Tioga (Phila. Co.)—
Keeler, V. Z., J. M. C.
Vanartsdalen, ——

MONTOUR COUNTY.

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	I. Pursell,	Danville.
Secretary,	James Ogleby,	"
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MEMBERS.

Danville—
Amerman, Alonzo, Uni. Pa., '75.
Grauel, Geo., N. Y. M. C., '62.
Magill, Wm. H., not registered.
Mausteller, J. D., Uni. P[illegible]., '71.
Ogleby, Jas., J. M. C., '68.
Pursell, Isaac, Uni. Pa.
Schultz, S. S., Uni. Pa., '56.
Simington, R. S., Uni. Pa., '54.
Danville—
Strawbridge, Jas. D., Uni. Pa., '47.
Vastine, Jacob, J. M. C., '58.
Riverside (Northumb. Co.)—
Smith, Nelson M., Uni. Pa., '82.
Washingtonville—
Hoffa, J. P., J. M. C., '76.
Newbaker, P. C., J. M. C., '69.

NORTHAMPTON COUNTY.

OFFICERS.

President,	John Buzzard,	Bangor.
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	W. H. Seip,	Bath.
Recording Secretary,	Chas. McIntire, Jr.,	Easton.
Corresponding Secretary,	Isaac Ott,	"
Treasurer,	John Sandt,	"

MEMBERS.

Bangor—
Buzzard, John, L. I. C. H., '75.
Seem, A. A., J. M. C., '65.
Bath—
Fox, G. T., Uni. N. Y., '65, and Bellevue H. M. C., '75.
Kern, P. M., J. M. C., '76.
Seip, W. H., J. M. C., '59.
Belfast—Uhler, T. M., J. M. C., '74.
Bethlehem—
Brenig, P. B., Uni. N. Y. C., '56.
Lawall, L. H , Uni. Pa., '64.
Praeger, H. F., J. M. C., '80.
Roebuck, J. H., Uni. Pa., '65.
Stout, Abraham, Uni. Pa., '56.
Wilson, J. H., Uni, Pa., '60.
Catasauqua (Lehigh Co.)—
Steinmetz, E. G., L. I. C. H., '67.
Chapmans—Berlin, J. O., J. M. C., '74.
Cherryville—
Engelman, Jos. P., J. M. C., '61.
Coplay—Stern, P. S., Uni. Pa., '80.
Easton—
Abernethy, H. H., Uni. Pa., '30.
Bachman, S. S., L. I. C. H., '70.
Easton—
Engelman, David, J. C. M., '64.
Green, Traill, Uni. Pa., '35.
Hunt, J. S., C. P. & S., N. Y., '65.
Kotz, A. L., J. M. C., '81.
Lachenour, H. D., J. M. C., '59.
Laubach, Stephen, Uni. Pa., '64.
McIntire, Chas., Uni. Pa., '73.
Moore, J. W., Uni. Pa., '69.
Ott, Isaac, Uni. Pa., '69.
Sandt, John, Uni. Pa., '50.
Sandt, Samuel, Uni. Pa., '44.
Seip, A., Uni. Pa., '48.
Seip, M. S., Uni. Pa., '76.
Swift, E. C., Uni. Pa., '68.
Weaver, J. H., Uni. Pa., '81.
Hecktown—
Beck, R. H., Uni. Pa., '74.
Hellertown—
Brown, Alfred, Uni. Pa., '71.
Klecknersville—
Snock, E. L., J. M. C., '78.
Martin's Creek—
Seem, A. K., J. M. C., '52.

Mount Bethel—
Rauf, J. F., L. I. C. H., '70.
Pen Argyle—
Cawley, T. F., Bellevue H. M. C., '80.
Petersville—
Koch, J. G., J. M. C., '65.
Philadelphia (Phila. Co.)—
Mixsell, T., Uni. Pa., '68.
Seidersville—
Pflueger, C. F., J. M. C., '72.
South Bethlehem—
Bachman, T. S., J. M. C., '80.
Swoyer, O. D., Uni. Pa., '78.
South Easton—
Zeiner, L. S., J. M. C., '79.
Stewartville (N. J.)—
Knecht, C., J. M. C., '80.
Weaversville—
Weaver, S. J., J. M. C., '72.

PERRY COUNTY.

Officers.

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Corresponding Secretary,	H. O. Orris,	"
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Reutter, Geo. N., Uni. Md., '58.
Centre—
De Lancey, C. E., Uni. N. Y., '78.
Duncannon—
Johnson, T. L., Uni. Pa., '68.
McMorris, Noble C., Penna. M. C., '59.
Swartz, Joseph, J. M. C., '57.
Ickesburg—
Bryner, N., Uni. N. Y., '81.
Cisna, W. R., Uni. Pa., '65.
Landisburg—
Milliken, D. B., Uni. N. Y., '54.
Sheibly, J. P., Uni. Pa., '68.
Loysville—
Hooke, B. P., Uni. Pa., '55.
Liverpool—
Morris, T. G., Penna. M. C., '43.
Thompson, J. F., J. M. C., '64.
Markleville—
Shull, J. D., C. P. & S. Balt., '77.
Millerstown—
Brubaker, J. L., Wash. Uni. Balt., '74.
Marysville—
Boyd, J. M., Ohio M. C., '80.
Eppley, Geo. W., Uni. Phila., '64.
Traver, A. J., Eclectic M. C. Penna., '68.
New Bloomfield—
Strickler, M. B., Uni. Pa., '61.
New Buffalo—
Steele, F. C., Uni. Pa., '79.
Newport—Eby, Jas. B., Uni. Pa., '66.
Orris, H. O., Uni. Pa., '67.
Shermandale—
Sheeder, P. J. S., Uni. N. Y., '79.

PHILADELPHIA COUNTY.

OFFICERS.

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Philadelphia—

Abbot, G. E., Uni. Pa., '79.
Adler, John M., National M. C., '51.
Agnew, D. Hayes, Uni. Pa., '38.
Alexander, John J., Uni. Pa., '80.
Allen, Harrison, Uni. Pa., '61.
Allen, J. G., " " '56.
Allis, Oscar H., J. M. C., '66.
Anders, J. M., Uni. Pa., '77.
Andrews, Thos. H., J. M. C., '64.
Ash, H. St. Clair, Penna. M. C., '80.
Ashhurst, John, Jr., Uni. Pa., '60.
Ashhurst, Samuel, " " '61.
Ashmead, Wm., " " '26.
Ashton, S. K., " " '43.
Atkinson, Wm. B., J. M. C., '53.
Atlee, W. L., Jr., " " '69.
Baer, B. F., Uni. Pa., '76.
Baker, W. H., " " '75.
Baldwin, L. K., J. M. C., '62.
Barr, D. M., " " '64.
Bartholow, Roberts, Uni. Md., '52.
Barton, Isaac, J. M. C., '77.
Barton, J. M., " " '68.
Baxter, H. F., Uni. Pa., '64.
Beates, Henry, " " '79.
Bell, E. H., J. M. C., '75.
Bell, J. R. F., Uni. Pa., '69.
Benner, H. D., Uni. Pa., '55.
Bennett, W. H., " " '69.
Bernardy, E. P., " " '68.
Bidlack, J. B. W., Uni. Pa., '69.
Bissey, H. S., " " '80.

Philadelphia—

Blackwood, W. R. D., Uni. Pa., '62.
Bochroch, M. H., J. M. C., '80.
Boker, C. S., Uni. Pa., '52.
Bourbonville, A. C., J. M. C., '47.
Bradford, T. Hewson, J. M. C., '74.
Brinton, D. G., J. M. C., '60.
Brinton, John H., J. M. C., '52.
Bruen, Edw. T., Uni. Pa., '73.
Brunet, J. E., J. M. C., '73.
Buck, F. J., " " '56.
Buck, W. Penn, " " '69.
Buckby, Wilson, J. M. C., '70.
Bunting, R. R., " " '56.
Burnett, C. H., Uni. Pa., '67.
Burns, Robt., " " '39.
Burns, Robt. Bruce, Uni. Pa., '71.
Burns, W. A., Uni. Pa., '69.
Cadwalader, C. E., Uni. Pa., '61.
Caldwell, Alex., J. M. C., '69.
Campbell, J. M., " " '78.
Carncross, J. A., " " '76.
Carroll, Wm., " " '63.
Carter, John S., Harvard Uni., Med. Dept., '45.
Castle, F. D., Uni. Wurtzberg, '76.
Chase, A. F., J. M. C., '74.
Chestnut, J. H. W., Uni. Pa., '71.
Clark, L. S., Uni. Pa., '67.
Cleemann, R. A., Uni. Pa., '62.

Philadelphia—

Cohen, J. Solis, Uni. Pa., '60.
Collins, James, " " '60.
Conner, D. N., " " '67.
Cooper, J. C., J. M. C., '52.
Crandall, T. V., Coll. P. & S. N. Y., '65.
Crowley, T. S., J. M. C., '49.
Cruice, R. B., Uni. Pa., '59.
Cruice, W. R., " " '65.
Cumminskey, Jas., J. M. C., '56.
Currie, C. A., Uni. Pa., '80.
Curtin, R. G., " " '66.
Curtis, Levi, J. M. C., '47.
Da Costa, J. C., J. M. C., '78.
Darrach, Jas , Uni. Pa., '62.
Davidson, David, Uni. Pa., '71.
Deakyne, A. C., Penna. M. C., '53.
Deaver, J. B., Uni. Pa., '78.
Donnelly, J. F., J. M. C., '66.
Drysdale, Thos. M., Penna. M. C., '52.
Duer, E. L., Uni. Pa., '60.
Duhring, L. A., Uni. Pa., '67.
Dulles, C. W., " " '75.
Dunglison, R. J., J. M. C., '56.
Dunmire, Geo. B., " " '68.
Dwight, H. E., Uni. Pa., '67.
Engel, Hugo, J. M. C., '78.
Eshleman, Emory, J. M. C., '70.
Eshleman, I. S., J. M. C., '51.
Eskridge, J. T., " " '75.
Evans, Edw. L., Uni. Pa., '70.
Evans, Horace, " " '31.
Evans, H. Y., " " '58.
Evans, J. R., J. M. C., '51.
Feldstein, A., Uni. Prague, '64.
Fenton, Thos. H., Uni. Pa., '77.
Fischer, Emil, J. M. C., '55.
Fleming, Wm. J., Uni. Pa., '51.
Forbes, W. S., J. M. C., '52.
Foulkrod, J. K., Uni. Pa., '78.
Fox, C. W., Long Isl. Coll. Hosp., '65.
Franklin, M., J. M. C., '70.

Philadelphia—

French, M. S., J. M. C., '76.
Frick, Wm. S., " " '48.
Frické, Albert, Uni. Berlin, '39.
Friebis, Geo., J. M. C., '79.
Garretson, Jas. E., Uni. Pa., '59.
Gayley, Jas. F., " " '48.
Gerhard, A. S., " " '66.
Getchell, F. H., Dartmouth M. C., '60, and J. M. C., '71.
Girvin, Edward R., Uni. Pa., '75.
Girvin, Robt. M., J. M. C., '62.
Githens, W. H. H., Uni. Pa., '66.
Gittings, J. B. H., " " '63.
Glasgow, R. B., Uni. Pa., '78.
Goodell, Wm., J. M. C., '54, and Uni. Pa., '71.
Graham, Jas., J. M. C., '67.
Graham, John, " " '67.
Graydon, A., " " '77.
Groff, C. A., " " '75.
Gross, F. H., " " '55.
Gross, S. D., " " '28.
Gross, S. W., " " '57.
Grove, John H., Uni. Pa,, '49.
Hall, A. D., J. M. C., '54.
Hall, John C., Uni. Pa., '68.
Hall, L. Brewer, Uni. Pa., '73.
Hamill, R. H., " " '78.
Hamilton, George, " " '31.
Hammell, B. F., " " '63.
Harlan, Geo. C., " " '58.
Harlow, L. D., " " '48.
Harte, R. H., " " '78.
Harvey, H. D., " " '78.
Hatfield, Nathan, J. M. C., '65.
Hatfield, N. L., " " '26.
Hay, Thomas, Uni. Pa., '61.
Hays, I. Minis, " " '68.
Hazel, F. B., " " '69.
Hearn, Jos., J. M. C., '67.
Hellyer, Edw., Long. Isl. C. H., '64.
Henry, F. P., Uni. Pa., '68.
Hewitt, G. A., J. M. C., '77.
Hewson, Addinell, J. M. C., '50.
Hewson, Addinell, Jr., J. M. C., '79.
Heyl, Albert G., Uni. Pa., '70.

Philadelphia—

Hickman, N., Uni. Pa., '62.
Hine, E. C., Yale Coll., '61.
Hinkle, A. G. B., Uni. Pa., '57.
Hollopeter, W. C., " " '77.
Holt, J. F., Uni. Pa., '59.
Hooper, W. H., Uni. Pa., '59.
Hornor, C. W., J. M. C., '49.
Hottenstein, C. D., J. M. C., '48.
Hughes, Donnel, Uni. Pa., '59.
Hughes, Dan. E., J. M. C., '78.
Huidekoper, R. S., Uni. Pa., '77.
Hulshizer, A. H., J. M. C., '78.
Hunt, Wm., Uni., Pa., '49.
Hunter, Chas. T., Uni. Pa., '68.
Hutchinson, Jas. H., Uni. Pa., '58.
Isett, F. S., J. M. C., '76.
Ivison, John, Uni. Pa., '74.
Janney, W. S., Penna. M. C., '54, and J. M. C., '80.
Jefferis, E. P., Uni. Pa., '78.
Johnson, Russell H., Uni. Pa., '74.
Judd, L. D., J. M. C., '77.
Keating, J. M., Uni. Pa., '73.
Keating, Wm. V., Uni. Pa., '44.
Keen, W. W., J. M. C., '62.
Keir, W. G., Penna. M. C., '56.
Kelly, Jos. V., J. M. C., '68.
Kerr, Geo., Uni. Pa., '64.
Keyser, P. D., Uni. Jena, '64.
Kilduffe, Robert, J. M. C., '80.
Kirkbride, M. F., Uni. Pa., '74.
Kirkbride, Thos. S., Uni. Pa., '32.
Kirkpatrick, M. B., J. M. C., '79.
Klapp, Jos., Uni. Pa., '39.
Kline, Wm. O., Uni. Pa., '54.
Knight, S. R., " " '69.
Ladd, Horace, J. M. C., '48.
Landesberg, Max, Uni. Berlin, '65.
Leaman, Henry, J. M. C., '64.
Lee, Benj., N. Y. M. C., '56.
Lee, J. G., J. M. C., '78.
Leffmann, Henry, J. M. C., '69.
Leidy, Jos., Uni. Pa., '44.

Philadelphia—

Leidy, Philip, Uni. Pa., '59.
Levan, J. R., " " '60.
Levis, R. J., J. M. C., '48.
Linn, G. W., Uni. Pa., '72.
Little, W. S., Bellevue M. C., '73, and J. M. C., '77.
Livingston, A. T., Uni. Buffalo, '78.
Loder, P. E., J. M. C., '73.
Loeling, G., " " '74.
Longstreth, Morris, Uni. Pa., '69.
Lopez, Jos. H., J. M. C., '76.
Ludlow, John L., Uni. Pa., '41.
Lyons, Wm., Penna. M. C., '56.
MacAvoy, Jno., Penna. M. C., '41.
MacBride, Isaac, Uni. Pa., '54.
Macomber, N. G., " " '71.
McAdam, A. H., " " '63.
McCall, C. A., Uni. Pa., '58.
McClellan, Geo., J. M. C., '70.
McClelland, R. M., " " '79.
McClelland, C., " " '73.
McCollin, S. M., " " '78.
McCombs, R. S., Uni. Pa., '68.
McCoy, A. W., " " '70.
McCracken, G. Y., " " '76.
McDowell, S. B., J. M. C., '76.
McElroy, B. F., Uni. Pa., '77.
McFerran, Jas. A., J. M. C., '47.
McIlvaine, C. H., Uni. Pa., '77.
McLean, H. D., J. M. C., '54.
McMurray, A. S., " " '42.
McRean, T. A., Phila. C. M., '50.
Martin, J., J. M. C., '78.
Massey, G. B., Uni. Pa., '69.
Mears, J. Ewing, J. M. C., '65.
Meigs, A. V., Uni. Pa., '71.
Meigs, John F., Uni. Pa., '38.
Mercur, J. D., J. M. C., '78.
Miller, C. H., Uni. Marburg, '45, and J. M. C., '50.
Mills, C. K., Uni. Pa., '69.
Minick, A. K., J. M. C., '70.
Mitchell, S. Weir, J. M. C., '50.
Moffet, Wm., " " '75.
Montgomery, E. E., J. M. C., '74.

Philadelphia—

Moon, W. P., Phila. M. C., '59.
Morehouse, Geo. R, J. M. C., '50, and Uni. Pa., '75.
Morris, J. C., Uni. Pa., '54.
Muhlenberg, F., Uni. Pa., '67.
Muller, A. F., Uni. Pa., '68.
Musser, J. H., " " '77.
Nancrede, C. B., Uni. Pa., '69.
Nash, J. D., J. M. C., '65.
Nebinger, Andrew, Uni. Pa., '50.
Neff, Jos. S., J. M. C., '75.
Newcomet, H. W., Uni. Pa., '65.
Nolan, E. J., Uni. Pa., '67.
O'Farrell, G. D., Uni. Pa., '62.
O'Hara, Michael, " " '52.
Oliver, Chas. A., " " '76.
O'Neil, J. J., " " '71.
O'Neill, F. X., " " '76.
Osler, Owen, J. M. C., '46.
Ott, L., J. M. C., '78.
Packard, John H., Uni. Pa., '53.
Pancoast, Wm. H., J. M. C., '56.
Parish, W. H., J. M. C., '70.
Partenheimer, J. R., Uni. Pa., '72.
Pearson, J. S., Uni. Pa., '76.
Peltz, Josiah, Uni. Pa., '67.
Pepper, Wm., " " '64.
Perkins, E. S., " " '69.
Perkins, F. M., Uni. Pa., '76.
Perry, Hext. M., J. M. C., '72.
Phelps, Wm. C., Penna. M. C., '56.
Phister, Benj., J. M. C., '56.
Piersol, G. A., Uni. Pa., '77.
Porter, Wm. G., Uni. Pa., '68.
Potsdamer, J. B., J. M. C., '79.
Prall, C. R., J. M. C., '56.
Price, M., Uni. Pa., '69.
Ranck, C. B., Uni. Pa., '72.
Randall, B. A., Uni. Pa., '79.
Raub, John A., " " '62.
Reed, A. G., Uni. Pa., '68.
Rex, G. A., " " '68.
Rex, O. P., J. M. C., '67.
Rich, T. C., Georgetown Coll., Wash., D. C., '69, and J. M. C., '78.

Philadelphia—

Richardson, E., Uni. Pa., '67.
Richardson, J. G., " " '63.
Rickards, Wm. C. L., Uni. Pa., '43.
Risley, S. D, Uni. Pa., '70.
Roberts, A. S., " " '77.
Roberts, J. B., J. M. C., '74.
Rogers, Robt. E., Uni. Pa., '36.
Sajous, C. E., J. M. C., '78.
Santee, E. I., Uni. Pa., '66.
Schaffer, Chas., " " '59.
Schapringer, A., Uni. Vienna., '72.
Scheidt, P. M., Uni. Pa., '77.
Schell, H. S., " " '57.
Schoales, J. D., " " '57.
Schott, Arnold, J. M. C, '68.
Seiler, Carl, Uni. Pa., '72.
Seltzer, C. M., " " '78.
Seyfert, T. H., " " '67.
Shakespeare, E. O., Uni. Pa., '69.
Shapleigh, E. B., Uni. Pa., '49.
Shattuck, G. F., Med. Dep. Harv. Uni, '63.
Shelly, A. F., J. M. C., '60.
Sheppard, F. C., Uni. Pa., '79.
Shimwell, B. T., J. M. C., '75.
Shoemaker, J. V., " " '74.
Simes, J H. C., Uni Pa., '70.
Simon, T. W., J. M. C., '77.
Simsohn, J. S., " " '74.
Sinkler, W., Uni. Pa., '63.
Skillern, P. G., Uni. Pa., '77.
Skillern, S. R., " " '54.
Skilling, M. J., J. M. C., '73.
Smaltz, J. H., Uni. Pa., '50.
Smith, A. H., Uni. Pa., '56.
Smith, H. A., Uni. Pa., '75.
Smith, H. H., Uni. Pa., '37.
Smith, R. M., Uni. Pa., '76.
Stein, L. K., Uni. Pa., '60.
Stienbach, L. W., J. M. C., '80.
Stelwagen, H. W., Uni. Pa., '79.
Stetler, J. G., Penna. M. C., '49.
Stewart, Wm. S., J. M. C., '63.

Philadelphia—

Stille, Alfred, Uni. Pa., '36.
Stocker, A. E., Uni. Pa., '40.
Stone, Edw. R., J. M. C., '72.
Stone, Jas. F., Bellevue M. C., '66.
Strawbridge, Geo., Uni. Pa., '65.
Stubbs, Geo. E., Med. Dep. Harv. Uni., '63.
Styer, C., Uni. Pa., '62.
Swayze, Geo. B. H., J. M. C., '59.
Taylor, J. H., Uni. Pa., '52.
Taylor, J. M., Uni. Pa., '78.
Taylor, Wm. Terry, Uni. Pa., '48.
Thomas, Chas. H., Uni. Pa., '65.
Thomson, William, J. M. C., '55.
Toboldt, A. L. A., Uni. Pa., '73.
Trautman, B., Georgetown Uni., D. C., '74.
Treacy, D. J., J. M. C., '67.
Troth, S. N., J. M. C., '49.
Turnbull, C. S., Uni. Pa., '71.
Turnbull, Laurence, J. M. C., '45.
Tyson, James, Uni. Pa., '63.
Vanderslice, E. S., Uni. Pa., '64.
Vandyke, E. B., Uni. Pa., '56.
Van Valzah, W. W., J. M. C., '76.
Vogler, G. W., Uni. Pa., '76.
Walk, Jas. W., Uni. Pa., '78.
Walker, Jas. B., Uni. Pa., '72.
Wallace, E., J. M. C., '43.
Watson, E. W., Uni. Pa., '75.

Philadelphia—

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Webb, W. H., J. M. C., '66.
Wehner, J. H., Penna. M. C., '61.
Welch, W. M., Uni. Pa, '59.
Wells, Jas. Ralston, J. M. C., '54.
Wevill, R. Henry, J. M. C., '53.
Wharton, H. R., Uni. Pa., '76.
Wharton, R. S., J. M. C., '76.
Wheeler, E. B., Bellevue M. C., '73.
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White, J. W., Univ. Pa., '73.
Whiteside, Jno. E, Penna. M. C., '74.
Wiley, Eugene, J. M. C., '69.
Willard, De Forrest, Uni. Pa., '67.
Williams, H., Uni. Pa., '65.
Williamson, Jesse, J. M. C., 73.
Willits, Chas. H., Uni. Pa., '79.
Wilson, Benj. B., Uni. Pa., '50.
Wilson, Ellwood, J. M. C., '45.
Wilson, H. A., J. M. C., '79.
Wilson, Jas. C., J. M. C., '69.
Wilson, Jas. F., Uni. Pa., '64.
Wirgman, Chas., J. M. C., '77.
Wittig, Chas. F., Uni. Gottingen, '33.
Wolford, W. S., J. M. C., '73.
Wood, H. C., Uni. Pa., '62.
Woodbury, F., J. M. C., '73.
Woods, D. F., Uni. Pa., '64.
Yarrow, Thomas J., Uni. Pa., '61.
Zeigler, Geo. J., Uni. Pa., '50.
Zeigler, Walter M. L., Uni. Pa., '74.

SCHUYLKILL COUNTY.

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Auburn—Quail, C. E.
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Chrisman, R. S.
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Halberstadt, Geo. H.
Palmer, C. T.
Smith, W. C. J.
Swayze, Mary Alice.
Swaving, J. G. C.
Weaver, R. T.
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Shamokin—(Northumberland Co.)—
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Reagan, G. L.
Spaulding, S. C.
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Tamaqua—Baur, Jos.
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Smith, A. M., J. M. C., '70.
Beaver Springs—
Wagner, Jno. O., C. P. & S., Balt., '80.
Beavertown—
Bordner, H. H., Ann Arbor Uni., '74.

Beavertown—
Strohecker, J. T., J. M. C., '77.
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Tool, E. W., C. P. & S., Balt., '80.
Kratzerville—
Hermann, Perc., Cinci. C. M. & S., '76.
Mt. Pleasant Mills—
Rothrock, M., C. P. & S., Balt., '81.
Middleburg—
Rothrock, Roswell, J. M. C., '51.
Shindel, Jno. Y., Penna. M. C., '55.
Penn's Creek—
Kanawell, J. F., Uni. Pa., '79.
Sampsell, J. W.
Selins Grove—
Wagonseller, B. F., Penna. M. C., '60.

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Harrison, G. M., Mich. Uni., '75.
Brackney—Lewis, J. A.
Tiffany, C. W., N. Y. Uni., '81.
Brooklyn—Ainey, A. J., Yale, '67.
Chamberlin, A. (not a graduate).
Clifford—Gardner, E. R., J. M. C., '82.
Gardner, P. H., 40 years' practice.
Factoryville—
Brundage, A. T., Castleton M. C., '45.
Brundage, Geo. A., Mich. Uni., '76.
Gibson—
Rogers, Wm., Mich. Uni., '69.
Great Bend Boro'—
Hines, E. P., J. M. C., '74.
Wilmot, E. F., Phila. M. C., '54.
Great Bend Village—
Dayton, S. W., J. M. C., '63.
Lamb, F. D., Uni. Buffalo, '75.
Harford—
Blakeslee, W. R., N. Y. Uni., '65.
Galbraith, W. S., Cinci. C. M. & S., '80.
Pennepacker, H., Uni. Pa., '66.
Hopbottom—
Schoonmaker, P., Mich. Uni., '80.
Jackson—
Engle, S. J., Albany M. C., '79.
Kirkwood—
Beebe, W. S., Mich. Uni., '67.
Montrose—Gardner, E. L., Yale, '61.
Halsey, C. C., Castleton M. C., '50.
Richardson, W. L., J. M. C., '48.
Strange, W. W., J. M. C., '81.
New Milford—
Ainey, D. C., Yale, '60.
Smith, L. A., 42 years' practice.
Susquehanna Depot—
Birdsall, S., Bellevue H. M. C., '65.
Filewood, F. (not a graduate).
Smith, E. N. " "
Tingley, E. A., Uni. Buffalo, '48.
Thompson—
Stimpson, A. O., McGill Uni., Canada, '68.

TIOGA COUNTY.

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Arnot—
- Waters, D. C., Georgetown M. C.

Blossburg—Crandal, Geo. D.
- Ingram, Nelson, Bellevue H. M. C., '65.
- Jennings, Wm. H., Rush M. C., Chicago, '77.

Cherry Flats—
- Martin, H. G., many years' practice.

Covington—
- Robins, E. S., many years' practice.

Gaines—
- Ritter, F. D., Buffalo Uni., '61.

Knoxville—Francis, W. R.

Lawrenceville—
- Darling, Lewis, Jr., Ann Arbor Uni., '66.
- Granger, Locke, Geneva M. C., '45.

Mainesburg—
- Maine, Geo. D., Uni. Buffalo, '65.

Mansfield—
- Elliott, C. V., many years' practice.
- Moody, Benj., J. M. C., '69.
- Vedder, W. D., C. P. & S., Balt., '80.

Nelson—
- Lincoln, S. W., C. P. & S., Balt., '79.
- Loop, A. M., many years' practice.

Osceola—
- Heggie, A. J., many years' practice.
- Humphrey, W. G., C. P. & S., Balt., '80.
- Humphrey, W. T., many years' practice.

Tioga—
- Borden, C. B., N. Y. C. M., '77.
- Borden, H. H., many years' practice.
- Fisk, Ansel J., Detroit M. C., '76.
- Smith, Robt. B., L. I. C. H., '66.

Wellsboro'—
- Bacon, Daniel, Uni. Buffalo, '60.
- Bacon, M. L., L. I. C. H., '73.
- Baldwin, Mary E., Woman's M. C., N. Y., '74.
- Packer, N., many years' practice.
- Thompson, C. K., Geneva M. C., '47.
- Webb, W. W., Castleton M. C., '54.

Westfield—
- Bottom, A. L., Detroit M. C., '75.
- Masten, Jas., many years' practice.

Woodhull—Seeley, A. H.

VENANGO COUNTY.

OFFICERS.

President,	E. W. Moore,	Franklin.
Vice-Presidents,	J. E. Blaine,	Pleasantville.
	A. F. Coope,	Oil City.
Recording Secretary,	A. F. Coope,	"
Assist. Recording Secretary,	W. L. Whann,	Franklin.
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Treasurer,	T. W. Egbert,	"

MEMBERS.

Cherrytree—
- Westlake, E. C., Cinci. C. M. & S., '58.

Clintonville—
- Hoffman, K. M., Uni. of Hudson, '70.
- Parr, G. W., Bellevue, '72.

Cooperstown—
- Crawford, J. K., Uni. Pa., '68.
- Crawford, Robt., Uni. Pa., '60.
- Dille, G. W., Cleveland M. C., '72.
- Dille, J. M., Uni. Willoughby, Ohio.

Emlentown—
- Hamilton, B. F., Charity H. M. C., Ohio, '67.
- Moore, J. E., Bellevue, '73.

Franklin—
- Moore, E. W., Charity H. M. C., '69.
- Snowden, S. G., Phila. C. of M., '59.
- Welsh, W. S., Cleveland M. C., '52.
- Whann, W. L., Starling M. C., '57, and J. M. C., '68.

Oil City—
- Benton, L. H., Uni. Buffalo, '70, and Bellevue, '80.
- Coope, A. F., Uni. Mich., '70.
- Davis, F. F., Uni. Mich., '67.
- Egbert, T. W., M. C. Ohio, Cinci., '63.
- McCullough, T. C., J. M. C., '53.
- Ritchey, J. A., J. M. C., '71.

Pleasantville—
- Blaine, J. E., Bellevue, '72.

WARREN COUNTY.

OFFICERS.

President,	John Curwen,	Warren.
Vice-Presidents,	H. L. Bartholomew,	"
	J. L. Burroughs,	Sugar Grove.
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Corresponding Secretary,	W. W. Seabury,	Sugar Grove.
Treasurer,	Reverdy B. Stewart,	Warren.

MEMBERS.

Chandlers Valley—
- Whitcomb, J. W., Uni. Buffalo, '82.

Columbus—
- Chapin, H. C., Uni. Wooster, '78.

Farmington—
- Cowles, H. H., Uni. N. Y., '77.

Kane (McKean Co.)—Preston, Geo.

Kenzua—
- Knapp, J. J., C. P. & S., Balt. '81.

Lottsville—
Whitney, W. D., Uni. Buffalo, '74.
North Clarendon—
Livingston, E. E., Uni. Buffalo, '82.
North Warren—
Cowden, E. J., Uni. Buffalo, '82.
Sheffield—
McNett, G. F., C. P. & S., Balt., '79.
Sugar Grove—
Burroughs, J. L., Uni. Vermont, '61.
Seabury, W. W., Uni. Wooster, O., '75.
Tidioute—
Shugart, F. A., 40 years' practice.
Warren—
Baker, Willis M., Uni. Buffalo, '78.
Bartholomew, H. L.. Dart. Med. Dept., '63.
Curwen, John, Uni. Pa., '44.
Guth, M. S., Uni. Pa., '76.
Hazeltine, Wm. V , 17 years' practice.
Stewart, Reverdy B., Uni. Md., '65.
Stewart, Richard B., M. & S. C., Balt., '81.
Stranahan, D.V., Uni. Buffalo., '72.
Wilcox (McKean Co.)—
Straight, A. M.
Youngsville—
Crawford, S. M., Uni. Pa., '78.

WASHINGTON COUNTY.

Officers.

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Beallsville—
Tambaugh, L. H., Cleveland M. C., '77.
Beantleysville—
Scott, J. Y., Uni. Pa.,'75.
Buffaloville—
Snodgrass, H. L., Uni. Mich., '76.
Burgettstown—
Bradley, T. W., Starling M. C., '57.
Canonsburg—
Alexander, J. W., 41 years' practice.
Donaldson, J. B., Cleveland M. C., '72.
Claysville—
Sprouls, I. N., J. M. C., '77.
Dunningsville—
Emory, B. A., J. M. C., '78.
Emory, B., Uni. Pa., '57.
East Bethlehem—
Farquhar, Q. C., Uni. Pa., '77.
Eldersville—
McCarrel, J. F., 18 years' prac-
Hickory—
McCarrel, D., 25 years' practice.
McElroy, J., Uni. Worcester, '71.
Monongahela City—
Lynn, G. A., J. M. C., '69.
Lytle, G. E., J. M. C., '77.
Morrison, M. P., J. M. C., '51.
Scott, F. P., Uni. Louisville, '71.
Sloan, J. G., Georgetown M. C., '69.

Monongahela City—
Wood, C. B., Uni. Pa., '76.
Sparta—
Blachley, O. L., J. M. C., '77.
Blachley, S. L., J. M. C., '70.
Taylorstown—
Crawford, J. S., Cleveland M. C., '61.
Vanceville—
McDonough, H. H., Cleveland M. C., '76.
Washington—
McElree, A. S., Uni. Pa., '66.
Washington—
McKean, J. A., Uni. Pa., '70.
McKennan, Thos., Uni. Pa., '46.
McKennan, H. S., Uni. Pa., '74.
Thompson, W. R., J. M. C., '67.
West Alexander—
Eagleson, D. S., J. M. C., '63.
Brownlee, J. C., Bellevue H. M. C., '70.
Zollarsville—
Patteron, J. A., Ohio M. C., '75.

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Howell, O. W., W. R. M. C., '80.
Burrell—
Moore, John R., J. M. C., '54.
Delmont—
Fulton, Jas. A., 10 years' prac.
Derry Station—
Cline, Jas. C., J. M. C., '80.
Klingensmith, I. P., J. M. C., '76.
Greensburg—
Anawalt, J. W., J. M. C., '55.
Cowan, Frank, Nat. M. C., '66.
Crawford, Jos. L., J. M. C., '68.
Hammer, R. B., Uni. Pa., '81.
Kamerer, J. W. B., J. M. C., '71.
Irwin Station—
Humphreys, G. L., J. M. C., '74.
Kifer, L. M., J. M. C., '78.
Marchand, Jas. J., J. M. C., '62.
Latrobe—
McConaughy, D. W., J. M. C., '58.
Latrope—
Welsh, D. Emmett, J. M. C., '78.
Ligonier—
McGowan, W. D., Uni. Pa., '51.
Madison—
Milligan, J. D., J. M. C., '76.
Manor Dale—
Rugh, W. J, Columbus M.C., '77.
Mount Pleasant—
Clark, J. H., 10 years' prac.
McConaughy, J., J. M. C., '45.
McConaughy, Robert, J. M. C., '75.
Marsh, F. L., J. M. C., '68.
New Alexander—
Cook, J. L., J. M. C., '58.
New Derry—
Cosgrove, W. B., C. P. & S. Balt., '80.
Painterville—
Berkey, N. G., J. M. C., '78.
Penn Station—
Offut, Lemuel, Uni. Balt., '76.
Pleasant Unity—
Brown, Logan, 10 years' prac.
Smith, L. T., J. M. C., '76.

Scottdale—
Strickler, A. W., J. M. C., '71.
Stonerville—
Rigg, J. E., C. P. & S. Balt., '79.
West Newtown—
Patton, F. H., J. M. C., '66.
Richie, J. H., W. R. M. C., '67.
West Newtown—
Robinson, J. Q., Uni. N. Y., '49.
Van Kirk, B. H., J. M. C., '69.
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Peebles, A. H., Cinci. C. P. & S., '76.

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Dillsburg—
Bailey, W. D., Uni. Pa., '62.
Wolford, L. M.
Glenville—
Steck, W. C., Wash. Uni. Balt., '74.
Hanover—
Allemon, Horace, M. C. Pa., '47.
Snively, A. J., Bellevue H. M. C, '66.
Weaver, M. P., Uni. Pa., '67.
Hellam—
Armstrong, J. A., Uni. Pa., '71.
Diesinger, Jonas, Uni. Pa., '67.
Loganville—
Yost, Geo. P., Wash. Uni. Balt., '71.
Manchester—
Kain, J. B., J. M. C., '71.
Red Lion—
Hyson, J. M., C. P. & S. Balt., '75.
Slate Hill—
McCurdy, W. H., J. M. C., '81.
Winterstown—
Hilderbrand, C. G., C. P. & S. Balt., '81.
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Rebman, G. A., Uni. Md., '76.
York—
Blair, A. R., J. M. C., '53.
Beltz, T. H.
Frey, Levi, Uni. N. Y., '50.
Gable, Isaac C., Uni. Pa., '77.
Hart, Jacob, Uni. Pa., '68.
Hay, Jacob, Uni. Md., '55.
Holahan, J. F., Uni. Pa., '67.
Kerr, J. W., Uni. Pa., '39.
Lochman, L. M., Penna. M. C., '82.
Long, Alfred A., Uni. Pa., '77.
McClure, W. H., Uni. Md., '66.
McKinnon, M. J., Uni. Pa.
Meisenhelder, E. W., J. M. C., '67.
Perkins, J. T., Uni. Md., '77.
Rouse, Samuel J., Penna. M. C., '51.
Rowland, Wm. S., Uni. Pa., '35.
Spangler, B. F., J. M. C., '68.
Spangler, J. R., " " '74
Spangler, C. F., " " '81.
Wagner, W. H., " " '81.
Wiest, John, Uni. Mich., '76.

ALPHABETICAL LIST

OF

MEMBERS OF COUNTY SOCIETIES.

A County placed in parentheses ( ) indicates the Society of which the person is a member.

Abbot, G. E., Philadelphia.
Abernethy, H. H., Easton, Northampton.
Adler, John M., Philadelphia.
Agnew, D. Hayes, Philadelphia.
Ainey, A. J., Brooklyn, Susquehanna.
Ainey, D. C., New Milford, Susquehanna.
Ake, Joseph H., Williamsburg, Blair.
Albright, F. G., Lancaster, Lancaster.
Alexander, J. F., Centre Hall, Centre.
Alexander, John J., Philadelphia.
Alexander, J. W., Canonsburg, Washington.
Alexander, W. B., Reynoldsville, Jefferson.
Allemon, Horace, Hanover, York.
Allen, E. P., Athens, Bradford.
Allen, Harrison, Philadelphia.
Allen, John M., Chester, Delaware.
Allen, Joshua G., Philadelphia.
Allis, O. H., Philadelphia.
Allison, T. H., Kittanning, Armstrong.
Allison, T. M., Kittanning, Armstrong.
Allport, H., Philipsburg, Clearfield.
Alter, M. H., Kittanning. Armstrong.
Amberson, J. B., Waynesboro, Franklin.
Amick, J. H. B., Schuylkill Haven, Schuylkill.
Ammerman, Alonzo, Danville, Montour.
Anawalt, James W., Greensburg, Westmoreland.
Anders, J. M., Philadelphia.
Anderson, Joseph W., Ardmore, Montg'y.
Anderson, M. E., Sayre, Bradford.
Anderson, William, Indiana, Indiana.
Andrews, R. H., Lansdale, Montgomery.
Andrews, Thomas H., Philadelphia.
Ansley, William B., Apollo, Armstrong.
Ansley, William B., Saltsburg, Indiana.
Armstrong, J. A., Hellam, York.
Armstrong, R., Lock Haven, Centre (Lycoming).
Arney, G. F., Altoona, Blair.
Arnholt, M. A., Pittsburg, Allegheny.
Arnold, H., Wayne (Del.), Montgomery.
Arnold, J. F., Williamsburg, Blair.
Asdale, W. J., Pittsburg, Allegheny.
Ash, H., St. Clair, Philadelphia.
Ashhurst, John, Philadelphia.
Ashhurst, Samuel, Philadelphia.
Ashmead, William, Germantown, Phila.
Ashton, S. K., Germantown, Philadelphia.
Atkinson, Wm. B., Philadelphia.
Atlee, John L., Lancaster, Lancaster.
Atlee, John L., Jr., Lancaster, Lancaster.
Atlee, W. Lemuel, Philadelphia.
Ayres, Samuel, Dixmont, Allegheny.

Bachman, C. H., Reading, Berks.
Bachman, S. S., Easton, Northampton.
Bacon, Daniel, Wellsboro', Tioga.
Bacon, M. L., Wellsboro', Tioga.
Baer, B. F., Philadelphia.
Bailey, Wm. D., Dillsburg, York.
Baker, Frances N., Media, Delaware.
Baker, A. R., Duke Centre, McKean.
Baker, W. A., Hydetown, Crawford.
Baker, W. H., Philadelphia.
Baker, Willis M., Warren, Warren.
Baldwin, Mary E., Wellsboro', Tioga.
Baldwin, L. K., Philadelphia.
Balmer, A. F., Brookville, Jefferson.
Barber, J. H., Strattonville, Clarion.
Bardwell, E. O., Emporium, Cameron.
Barr, David M., Philadelphia.
Barr, G. W., Titusville, Crawford.
Barr, James A., Shousetown, Beaver.
Bartelson, H. C., Fernwood, Delaware.
Bartelson, S. P., Clifton Heights, Del.
Barton, A. A., Plains, Luzerne.
Barton, Isaac, Philadelphia.
Barton, J. M., Philadelphia.
Bartholow, Roberts, Philadelphia.
Bartholomew, H. L., Warren, Warren.
Batten, John M., Pittsburg, Allegheny.
Baur, Joseph, Tamaqua, Schuylkill.
Baxter, H. F., Philadelphia.
Bean, G. W., Bainbridge, Lancaster.
Bean, W. H., Middletown, Dauphin.
Beates, Henry, Philadelphia.
Beaver, A. P., Millerstown, Adams.
Beaver, D. R., Conshohocken, Montg'y.
Beaver, Eugene, Alburtis, Lehigh.
Beck, J. N., Sligo, Clarion.
Beck, R. H., Hecktown, Northampton.
Beebe, W. S., Kirkwood, Susquehanna.
Belcher, C. E., English Centre, Lycoming.
Bell, E. H., Philadelphia.
Bell, J. R. F., Philadelphia.
Bell, S. D., Barnhart's Mill, Butler.
Beltz, T. H., York, York.
Bennenghoff, G. E., Kendall, McKean.
Benner, Henry D., Philadelphia.
Bennett, Alice, Norristown, Montgomery.
Bennett, Wm. H., Philadelphia.
Benton, S. H., Oil City, Venango.
Berlin, Jas. O., Chapmans, Northampton.
Berlin, W. S., Allentown, Lehigh.
Bernardy, E. P., Philadelphia.
Berntheizel, G. W., Columbia, Lancaster
Best, David, Meadville, Crawford.
Beyer, W. F., Punxsatawny, Jefferson.

Bickle, Geo. H., Rehrersburg, Berks.
Biddle, J. C., Shenandoah, Schuylkill.
Bidlack, J. B. W., Philadelphia.
Bigham, James, Allegheny, Allegheny.
Binckley, G. K., Orwigsburg, Schuylkill.
Birch, T. J., Port Carbon, Schuylkill.
Birdsall, S., Susquehanna Depot, Susquehanna.
Bischoff, H. W., Halifax, Dauphin.
Bishop, H. M., Sharon, Mercer.
Bishop, W. T., Harrisburg, Dauphin.
Bissey, H. S., Philadelphia.
Bixler, J. R., Carlisle, Cumberland.
Blachley, O. L., Sparta, Washington.
Blachley, S. L., Sparta, Washington.
Black, H. M., Strasburg, Lancaster.
Black, M. F., Newry, Blair.
Blackwood, Wm., Lancaster, Lancaster.
Blackwood, W. R. D., Philadelphia.
Blain, J. E., Pleasantville, Venango.
Blair, Alex. R., York, York.
Blair, J. M., Fleming, Centre.
Blakeslee, W. R., Harford, Susquehanna.
Bland, D. W., Pottsville, Schuylkill.
Blandy, T. R., Osceola, Clearfield.
Bleiler, P. O., Union Station, Lancaster.
Bloom, F. G., Martinsburg, Blair.
Bloom, H. C., Martinsburg, Blair.
Blumberg, A., Pittsburg, Allegheny.
Boal, G. Y., Baden, Beaver.
Bochroch, Max, Philadelphia.
Bockius, S. A., Columbia, Lancaster.
Boker, Charles S., Philadelphia.
Bolenius, R. M., Lancaster, Lancaster.
Bonebreak, D. W., Martinsburg, Blair.
Bonsteel, A. S., Corry, Erie.
Borden, C. B., Tioga, Tioga.
Borden, H. H., Tioga, Tioga.
Bordner, H. H., Beavertown, Snyder.
Bottum, A. L., Westfield, Tioga.
Bournonville, Aug. C., Philadelphia.
Bowman, Jacob, East Mauch Chunk, Carbon.
Bowman, J. D., Harrisburg, Dauphin.
Bowman, John F., Millersburg, Dauphin.
Bowman, J. W., Camp Hill, Cumberland.
Bowman, R. R., Kittanning, Armstrong.
Boyd, J. M., Marysville, Perry.
Boyer, J. H., Shepherdstown, Cumberland.
Boyles, R. M., Reynoldsville, Jefferson.
Brackbill, Jos., Strasburg, Lancaster.
Bradford, T. Hewson, Philadelphia.
Bradley, Chas., Norristown, Montgomery.
Bradley, T. W., Burgettstown, Washington.
Brady, S. H., Lost Creek, Schuylkill.
Brandes, Charles, Erie, Erie.
Brandt, E. B., Mechanicsburg, Cumberland.
Brallier, E., Chambersburg, Franklin.
Bredin, Stephen, Butler, Butler.
Brehm, S. H., Newville, Cumberland.
Brehman, G. E., Altoona, Blair.
Breinig, P. B., Bethlehem, Northamp.
Brendle, Geo. F., Mahanoy City, Schuyl.
Brewster, A. D., Pittsburg, Allegheny.
Brinton, Daniel G., Philadelphia.
Brinton, John H., Philadelphia.
Brinton, Wm. B., West Chester, Chester.
Brinton, W. M., Sharpsburg, Allegheny.
Brobst, Edward, Leesport, Berks.
Brobst, J. C., Litiz, Lancaster.
Brobst, John A., Bernsville, Berks.
Brooke, J. B., Reading, Berks.
Brooks, F. V., Breakneck, Butler.
Brooks, Jas., Plains, Luzerne.
Brown, Alfred, Hellertown, Northampton.
Brown, E. G., Smethport, McKean.
Brown, G. W., Port Carbon, Schuykill.
Brown, J. M., Mines, Altoona.
Brown, Jas. M., McVeytown, Mifflin.
Brown, R. B., Summerville, Jefferson.
Brownlee, J. C., West Alexander, Wash.
Brubaker, A. P., Philadelphia.
Brubaker, A. S., Ackron, Lancaster.
Brubaker, J. L., Millerstown, Perry.
Bruce, Geo. D., Pittsburg, Allegheny.
Bruckhart, W. S., Shoremanstown, Cumb.
Bruen, E. T., Philadelphia.
Brumbaugh, A. B., Huntingdon, Huntingdon.
Brundage, A. T., Factoryville, Wyoming. (Susquehanna.)
Brundage, F., Conyngham, Luzerne.
Brundage, G. A., Factoryville, Wyoming. (Susquehanna.)
Bruner, Daniel J., Columbia, Lancaster.
Brunet, J. E., Philadelphia.
Bryner, N., Ickesburg, Perry.
Bryson, L. M., Martinville, Lancaster.
Buchanan, J. G., Allegheny, Allegheny.
Buck, F. J., Philadelphia.
Buck, Wm. Penn, Philadelphia.
Buckby, Wilson, Philadelphia.
Bulkeley, J. E., Wilkesbarre, Luzerne.
Bullock, L. M., Upland, Delaware.
Bunting, R. R., Philadelphia.
Burchfield, J. P., Clearfield, Clearfield.
Burkett, G. W., Tyrone, Blair.
Burnett, Chas. H., Philadelphia.
Burns, Robert, Frankford, Philadelphia.
Burns, R. Bruce, Frankford, Philadelphia.
Burns, W. A., Philadelphia.
Burrell, J. L. A., Williamsport, Lycoming.
Burroughs, H. L., Sugar Grove, Warren.
Buss, C. D., Bradford, McKean.
Bushong, Israel, New Holland, Lancaster.
Buttermore, Smith, Connellsville, Fayette.
Buzzard, John, Bangor, Northampton.
Byerle, Geo. W., Bernville, Berks.
Byers, John A., Shenandoah, Schuylkill.
Byers, J. E., Butler, Butler.

Cadwalader, C. E., Philadelphia.
Cairns, S. R., Altoona, Blair.
Caldwell, Alex., Philadelphia.
Calvin, D. M., Meadville, Crawford.
Cambridge, C. H., Fleming, Centre.
Cameron, Norris, Penn Run, Indiana.
Campbell, C. S., Brownsdale, Butler.
Campbell, E. B., Williamsport, Lycoming.
Campbell, J. M., Philadelphia.
Campbell, R. A., Lewistown, Mifflin
Canfield, H. A., Gillmore, McKean.
Carey, R. B., Glenloch, Chester.
Carncross, J. A., Philadelphia.
Carpenter, Henry, Lancaster, Lancaster.
Carpenter, John T., Pottsville, Schuylkill.
Carr, A. P., St. Clair, Schuylkill.
Carrier, C. W., West Burlington, Bradford.
Carroll, T. A., Smethport, McKean.
Carroll, Wm., Philadelphia.
Carson, Thos., Saltsburg, Indiana.
Carter, Chas., Wallingford, Delaware.
Carter, J. S., Philadelphia.
Case, A. G., Pittsburg, Allegheny.
Castle, F. D., Philadelphia.
Cawley, T. F., Pen Argyle, Northampton.
Chamberlain, A., Brooklyn, Susquehanna.
Charles, Jacob, Lincoln, Lancaster.
Chase, A. F., Philadelphia.
Chase, Robt. H., Norristown, Montgomery.
Cheesman, J. C., Slatelick, Armstrong.
Chesrown, A. V., Pittsburg, Allegheny.
Chestnut, J. H. W., Philadelphia.
Chapin, H. C., —— Warren.
Chrisman, R. S., Pottsville, Schuylkill.
Christie, J. L., Connoquennesty, Butler.
Christie, L. H., Franklin, Venango.
Christler, J. H., Stonesboro', Mercer.
Chriswell, John, New Bethlehem, Clarion.
Christy, J. H., Allegheny, Allegheny.
Christy, T. C., Pittsburg, Allegheny.
Christy, —— Sabbath Rest, Blair.
Chritzman, H. G., Welsh Run, Franklin.
Church, Rita B., Williamsport, Lycoming.
Cisna, W. R., Ickesburg, Perry.
Clagett, L. S., Blairsville, Indiana.
Clagett, W. L., Standing Stone, Bradford.
Clark, A. T., Greenfield, Mercer.

Clark, G. L., Centreville, Crawford.
Clark, H. H, Pittsburg, Allegheny.
Clark, J. H., Mt. Pleasant, Westmoreland.
Clark, J. T., Erie, Erie.
Clark, L. G., Centreville, Crawford.
Clark, L. S., Philadelphia.
Clark, R. W., Dunbar, Fayette.
Clark, W. N., Whitestown, Butler.
Clarke, Rowan, Tyrone, Blair.
Claudy, J. C., Newville, Cumberland.
Cleaver, Israel, Reading, Berks.
Cleaves, Mgt. A., Harrisburg, Dauphin.
Cleeman, R. A., Philadelphia.
Cline, Jas. C., Derry Station, Westmoreland.
Clinger, P. S., Conestoga, Lancaster.
Closson, C. H., Altoona, Blair.
Clover, W. M., Lamartine, Clarion.
Coblentz, Jos., Reading, Berks.
Cohen, J. Solis, Philadelphia.
Cole, W. W., Allegheny, Allegheny.
Collins, James, Philadelphia.
Colt, S. F., Laporte, Sullivan (Bradford).
Compton, Wm., Lancaster, Lancaster.
Confer, D. C., Duncansville, Blair.
Conklin, Gustavus, Orwell, Bradford.
Connell, Jas. G., Oakland, Allegheny.
Conner, D. N., Philadelphia.
Connors, W. F., Duke Centre, McKean.
Cook, Jos. L., New Alexandria, Westmoreland.
Cook, W. J., Freeport, Armstrong.
Coope. A. F., Oil City, Venango.
Cooper, A. M., Point Pleasant, Bucks.
Cooper, J. C., Philadelphia.
Coover, David H., Harrisburg, Dauphin.
Coover, Eli H., Harrisburg, Dauphin.
Coover, F. W., Harrisburg, Dauphin.
Corson, Elwood M., Norristown, Montgomery.
Corson, Hiram, Conshohocken, Montgomery.
Corson, Wm., Norristown, Montgomery.
Corss, Fred., Kingston, Luzerne.
Cottrell, J. F., Columbia, Lancaster.
Cowan, Frank, Greensburg, Westmoreland.
Cowden, E. J., North Warren, Warren.
Cowden, W. R., Jacksville, Butler.
Cowles, H. H., Farmington, Warren.
Cox, Andrew P., Big Run, Jefferson.
Cox, T. B., Lancaster, Lancaster.
Craig, Alex., Columbia, Lancaster.
Craig, S. A., Freedom, Beaver.
Craighead, J. A., Pittsburg, Allegheny.
Crandall, G. D., Blossburg, Tioga.
Crandall, T. V., Philadelphia.
Crawford, J. B., Wilkesbarre, Luzerne.
Crawford, J. K., Cooperstown, Venango,
Crawford, J. L., Greensburg, Westmoreland.
Crawford, J. S., Taylorstown, Washington.
Crawford, Robert, Cooperstown, Venango.
Crawford, S. M., Youngsville, Warren.
Cressler, John M., Wilkesbarre, Luzerne.
Cromer, ——, Millport, Carbon.
Crosthwaite, D. W., Altoona, Blair.
Crowly, T., Stanton, Philadelphia.
Cruice, R. B., Philadelphia.
Cruice, Wm. R., Philadelphia.
Cummiskey, Jas., Philadelphia.
Cunningham, J. G., Kittanning, Arms'g.
Cunningham, W. N., Jacksonville, Indiana.
Curtis, Levi, Philadelphia.
Curtin, R. G., Philadelphia.
Curwen, John, Warren, Warren.
Currie, Chas. A., Philadelphia.
Currier, ——, West Burlington, Bradford.

Da Costa, J. C., Philadelphia.
Dale, J. Y., Lemont Centre.
Dale, W. W., Carlisle, Cumberland.
Daly, W. H., Pittsburgh, Allegheny.
Darling, L., Jr., Lawrenceville, Tioga.
Darlington, H., Concordville, Delaware.
Darlington, Horace H., Concordville, Delaware.
Darrach, Jas., Germantown, Philadelphia
Davenport, B. H. K., Nauticoke, Luzerne.
Davidson, David, Philadelphia.
Davidson, J. H., Perryopolis, Fayette.
Davis, B. H., Lansford, Carbon.
Davis, B. H., Ashton, Carbon (Schuyl.).
Davis, D. H. Nanticoke, Luzerne.
Davis, D. L., Pittsburg, Allegheny.
Davis, F. F., Oil City, Venango.
Davis, John, Pottstown, Montgomery.
Davis, J. H., Soudersburg, Lancaster.
Davis, L. G., Breakneck, Butler.
Davis, M. L., Lancaster, Lancaster.
Davis, R., Wilkesbarre, Luzerne.
Davis, Thos. D., Pittsburg, Allegheny.
Davis, Samuel T., Lancaster, Lancaster.
Dayton, S. W., Great Bend, Susquehanna.
Deakyne, A. C., Philadelphia.
Dean, G. C., Lewistown, Mifflin.
Deaver, Jno. B., Philadelphia.
Deaver, J. M., Buchu, Lancaster.
Deemer, J. T., Munroville, Armstrong.
Deisinger, J., Hellam, York.
De La Montanye, L., Towanda, Bradford.
De Lancy, Chas. E., Centre, Perry.
De Lannoy, C. W., Chester, Delaware.
DeLong, W. H., Emporium, Cameron.
Derhamer, W. A., Lehighton, Carbon.
Detwiler, B. H., Williamsport, Lycoming.
Detwiler, T. C., Williamsport, Lycoming.
DeYoung, H., Mauch Chunk, Carbon.
Dewey, E. H., Meadville, Crawford.
Dickeson, W. T. W , Media, Delaware.
Diefenderfer, E. L., Ashley, Luzerne.
Dillman, J., Oregon, Lancaster.
Dill, A. B., Petersburg, Adams.
Dille, G. W., Cooperstown, Venango.
Dille, J. M., Cooperstown, Venango.
Donaldson, J. B., Canonsburg, Wash.
Donnelly, John F., Philadelphia.
Donnelly, ——, Summit Hill, Carbon.
Dorand, W. R., Bradford, McKean.
Dorn, S. B., Bradford, McKean.
Dorworth, E. S., Bellefonte, Centre.
Doty, L. L., ——, Crawford.
Doughty, Wm. E., Hartsville, Bucks.
Drake, H. H., Norristown, Montgomery.
Drake, E. G., Antrim, Tioga.
Drysdale, Thomas M., Philadelphia.
Duer, Edward L., Philadelphia.
Duff, J. M., Pittsburg, Allegheny.
Duff, W. L., Harrisburg, Dauphin.
Duhring, L. A., Philadelphia.
Dulles, Charles W., Philadelphia.
Duncan, J. A., Pittsburg, Allegheny.
Duncan, J. L., Pittsburg, Allegheny.
Duncan, W. S., Brownsville, Fayette.
Dundore, A. B., Reading, Berks.
Dunglison, Richard J., Philadelphia.
Dunlap, J. F., Manheim, Lancaster.
Dunmire, Geo. B., Philadelphia.
Dunn, J. C , Pittsburg, Allegheny.
Dunott, T. J., Harrisburg, Dauphin.
Dusenberry, C. S., Le Raysville, Bradford.
Dwight, H. E., Philadelphia.
Dwight, M. B., Jersey Shore, Lycoming.
Dyer, Ezra, Pittsburg, Allegheny.

Eagleson, D. S., West Alexander, Washington.
Eagleson, J. S., Meadville, Crawford.
Eagleton, James M., Philadelphia.
Earley, J. C., Earley, Elk (Lycoming).
Earnhout, E. L., Wilcox, Elk.
Eastman, H., ——, Fayette.
Easton, A., Allegheny City, Allegheny.
Eby, James B., Newport, Perry.
Egbert, Joseph C., Lovelle, Delaware.
Egbert, R. A., Red Rock, McKean.
Egbert, T. W., Oil City, Venango.

Ehler, J. Aug., Lancaster, Lancaster.
Ehrenfeld, N. F., Indiana, Indiana.
Eisaman, C. D. B., Adamsburg, Westmoreland.
Eisenberg, Philip Y., Norristown, Montgomery.
Elderdice, R. B., McKnightstown, Adams.
Ellenberger, J. W., Harrisburg, Dauphin.
Elliott, Thomas, Worth, Mercer.
Elliott, C. V., Mansfield, Tioga.
Elliott, J. C., Bradford, McKean.
Elliott, J S., Beaver Falls, Beaver.
Emmerling, C., Pittsburg, Allegheny.
Emory, B. A., Dunningsville, Wash.
Emory, Boyd, Dunningsville, Wash.
Engelman, David, Easton, Northampton.
Engelman, Jos. B., Cherryville, North'n.
Engle, Hugo, Philadelphia
Engle, S. J., Jackson, Luzerne.
Ely, R. H., Laceyville, Bradford.
Eppley, G. W., Marysville, Perry.
Erdman, F. C., Centre Valley, Lehigh.
Erdman, J. D., Macungie, Lehigh,
Erdman, Wm. B., Macungie, Lehigh.
Erwin, B. S., Mauch Chunk, Carbon.
Eshelman, Emory, Philadelphia.
Eshleman, Isaac S., Philade phia.
Eskridge, J. T., Philadelphia.
Evans, Edwin L., Philadelphia.
Evans, Horace, Philadelphia.
Evans, Horace Y., Philadelphia.
Evans, I. Newton, Hatborough, Montgomery.
Evans, J. R., Bloomsburg, Columbia.
Evans, Joshua R., Philadelphia.
Evans, T. R., Pittsburg, Allegheny.
Evans, W. C., Erie, Erie.
Everett, T. A., Burlington, Bradford.
Ewing, J. B., Uniontown, Fayette.
Ewing, R. B., West Grove, Chester.

Fager, C. M., Harrisburg, Dauphin.
Farquhar, Q. C., East Bethlehem, Washington.
Farrelly, Ellis M., Townville, Crawford.
Faulds, Wm. H., Mill Hollow, Luzerne.
Faulkner, R. B., Allegheny, Allegheny.
Fay, John, Altoona, Blair.
Fegley, H. C., Ashland, Schuylkill.
Feight, B., Economy, Beaver.
Feldstein, A., Philadelphia.
Fel y, J. C., Hunterstown, Adams.
Fenton, T. H., Philadelphia.
Filewood, F., Susquehanna Depot, Susquehanna.
Findley, Wm. M., Altoona, Blair.
Findley, Wm. R., Altoona, Blair.
Fischer, Emil, Philadelphia.
Fish, Wm. B., Elwyn, Delaware.
Fisher, P. S., Zion, Centre.
Fisk, A. J., Tioga, Tioga.
Fitzgerald, J. M., Lamartine, Clarion.
Fleming, A., Pittsburg, Allegheny.
Fleming, Wm. J., Philadelphia.
Flickenger, J. H., Fannettsburg, Franklin.
Floyd, J. B., Belleville, Mifflin.
Follett, F. M., Bradford, McKean.
Forbes, W. S., Philadelphia.
Ford, Sidney E., Dallas City, McKean.
Foreman, S. B., Lancaster, Lancaster.
Forwood, J. F. M., Chester, Delaware.
Foster, D. Gilmore, Crafton, Allegheny.
Foster, Wm., St. Petersburg, Clarion.
Foster, W. S., Pittsburg, Allegheny.
Foulkrod, Jno. K., Philadelphia.
Foulke, Jos., Buckingham, Bucks.
Foust, J. W., Reynoldsville, Jefferson.
Fox, C. W., Philadelphia.
Fox, G. T., Bath, Northampton,
Francis, W. R. Knoxville, Tioga.
Franklin, M., Philadelphia.
Free, Spencer M., Dagus Mines, Elk.
French, C. S., Coudersport, Potter. (Cameron.)
French, M. S., Philadelphia.
Frey, Levi, York, York.
Frick, Wm. S., Philadelphia.
Fricke, Albert, Philadelphia.
Friebis, Geo., Philadelphia.
Fritchy, J. A., Harrisburg, Dauphin.
Fulk, Levi, New Kingston, Cumberland.
Fuller, Smith, Uniontown, Fayette.
Fulton, Jas., New London, Chester.
Fulton, Jas. A., Delmont, Westmoreland.
Fulton, J. F., Altoona, Blair.
Fulton, T. H., Sandy Lake, Mercer.
Fundenburg, G. B., Pittsburg, Allegheny.
Fundenburg, W. F., Pittsburg, Allegheny.
Fussel, Linnæus, Media, Delaware.

Gable, J. C., York, York.
Gaddis, L. S., Uniontown, Fayette.
Galbraith, W. S., Hartford, Susquehanna.
Gale, C. T., New Brighton, Beaver.
Gallaher, R. J., Pittsburg, Allegheny.
Gallaher, T. J., Pittsburg, Allegheny.
Gardner, E. R., Clifford, Susquehanna.
Gardner, E. R. L., Montrose, Susquehanna.
Gardner, P. H., Clifford, Susquehanna.
Garretson, Jas. E., Philadelphia.
Garver, Jane K., Harrisburg, Dauphin.
Gayley, Jas. F., Philadelphia.
Gelwix, J. M., Upper Strasburg, Franklin.
Gemmill, J. M., Jr., Tyrone, Blair.
George, M. R., South Bend, Armstrong.
Gerhard, A. S., Philadelphia.
Gerhard, J. Z., Harrisburg, Dauphin.
Gerry, M. M., Sylvan, Franklin.
Getchell, F. H , Philadelphia.
Gibson, W M B., Reynoldsville, Jeffer.
Giebner, E X., Sandy Lake, Mercer.
Gilbert, S. F., Elysburg, Northampton.
Gillaud, J. C., Greencastle, Franklin.
Gilliford, R. H., Allegheny, Allegheny.
Girvin, Robert M., Philadelphia.
Girvin, E. R , Philadelphia.
Githens, W. H. H., Philadelphia.
Gittings, J. B. H , Philadelphia.
Given, Robert A., Clifton Heights, Del.
Glacken, M., Green, Lancaster.
Glasgow, R. B., Philadelphia.
Gleim, Geo., Jr., Cornwall, Lebanon. (Schuylkill.)
Glenn, J. P., Snow Shoe, Centre.
Goff, G. G., Lewisburg, Union. (Chester.)
Goheen, B. F., Parker's Landing, Armstrong. (Clarion.)
Good, Frank H., Reading, Berks.
Goodell, Wm., Philadelphia.
Gorgas, S. R., Harrisburg, Dauphin.
Graham, F. R., Chester, Delaware.
Graham, Jas., Philadelphia.
Graham, John, Philadelphia.
Graham, Samuel, Butler, Butler.
Granger, L., Lawrenceville, Tioga.
Grauel, George, Danville, Montour.
Graver, J. D., Stineville, Lehigh.
Graydon, A., Philadelphia.
Green, Traill, Easton, Northampton.
Greene, J. J., Pittsburg, Allegheny.
Greene, Wilson, New Geneva, Fayette.
Griffin, J. K., North East, Erie.
Grime, W. H., Beaver Falls, Beaver.
Grimes, Jos. B., Pittsburg, Allegheny.
Griswold, E., Sharon, Mercer.
Groff, C. A., Philadelphia.
Gross, F. H., Philadelphia.
Gross, Samuel D., Philadelphia.
Gross, Samuel W., Philadelphia.
Grove, A. P. T., Dallas Town, York.
Grove, Geo., Big Spring, Cumberland.
Grove, John H., Philadelphia.
Groves, A. F., Bradford, McKean.
Guldin, B. C., Minersville, Schuylkill.
Gumaer, C. H., Rixford, McKean.
Guth, M. S., —— Warren.
Guthrie, G. W., Wilkesbarre, Luzerne.

Hakes, Harry, Wilkesbarre, Luzerne.
Halbauer, T. K., St. Clair, Schuylkill.
Halberstadt, A. H., Pottsville, Schuylkill.
Halberstadt, G. H., Pottsville, Schuylkill.
Hale, E. W., Bellefonte, Centre.
Hall, A. Douglass, Philadelphia.
Hall, John C., Philadelphia.
Hall, Jos. E., Emlenton, Venango. (Armstrong.)
Hall, L. B., Philadelphia.
Halsey, C. C., Montrose, Susquehanna.
Hamill, R. H., Philadelphia.
Hamilton, B. F , Emlenton, Venango.
Hamilton, George, Philadelphia.
Hamilton, Hugh, Harrisburg, Dauphin.
Hamilton, J. M., Verona, Allegheny.
Hamilton, S. S., Punxsatawney, Jefferson.
Hammell, B. F., Philadelphia.
Hammer, R. B., Greensburg, Westmoreland.
Harder, C. S., Rohrsburg, Columbia.
Harlan, Geo. C., Philadelphia.
Harlow, Lewis D., Philadelphia.
Harman, G. G , Lewistown, Mifflin.
Harper, D., Karns City, Butler.
Harris, Geo. F., Bellefonte, Centre.
Harrison, Geo. M., Auburn, Susquehanna.
Harshberger, A., Milroy, Mifflin.
Harshberger, A. S., Milroy, Mifflin.
Hart, Jacob, York, York.
Harte, R. H., Philadelphia.
Hartly, T. S., Ridgway, Elk.
Hartman, Paul A., Harrisburg, Dauphin.
Hartswick, J. G., Clearfield, Clearfield.
Hartzell, E., Fayetteville, Franklin.
Hartzell, H. L., Altoona, Blair.
Hartman, M. B., St. Mary's, Elk.
Harvey, Elwood, Chester, Delaware.
Harvey, H. D., Philadelphia.
Harvey, O. F., Wilkesbarre, Luzerne.
Haskins, C. A., Benezett, Elk.
Hassler, James P., Cochranton, Crawford.
Hatfield, Nathan, Philadelphia.
Hatfield, N. L., Philadelphia.
Hay, Jacob, Jr., York, York.
Hay, John W., Harrisburg, Dauphin.
Hay, Thomas, Philadelphia.
Hays, D. D., Shippensburg, Cumberland.
Hays, D. S., Hollidaysburg, Blair.
Hays, I. Minis, Philadelphia.
Hayes, T. R., Bellefonte, Centre.
Hazel, F. B., Philadelphia.
Hazeltine, W. V., Warren, Warren.
Hazen, S. A , Sharon, Mercer.
Hazlett, J. D., Bellevernon, Fayette.
Hazlett, Isaac C.,——— Fayette.
Hearn, Jos., Philadelphia.
Heckelman, H. W., Pittsburg, Allegheny.
Heggie, A. J., Osceola, Tioga.
Heilman, S., Sharon, Mercer.
Heilman, R. P., Emporium, Cameron.
Heilman, U. O., Kelly Station, Armstrong.
Hellyer, Edwin, Philadelphia.
Helsby, Thomas H., Williamsport, Lycoming.
Hengst, D. A., Pittsburg, Allegheny.
Henlen, B. A., North Hope, Butler.
Henry, F. P., Philadelphia.
Henry, J. A., Millville, Clarion. (Jefferson.)
Hepburn, W. M., Williamsport, Lycoming.
Herbst, H. Herbert, Reading, Berks.
Herman, A. J., Carlisle, Cumberland.
Hermann, Perc., Kratzerville, Snyder.
Hermany, P., Mahanoy City, Schuylkill.
Herr, A. J., Lancaster, Lancaster.
Herr, B. F., Millersville. Lancaster.
Herr, M. L., Lancaster, Lancaster.
Herr, F. C., Harrisburg, Dauphin.
Herron, W. M., Allegheny, Allegheny.
Hershy, E. R., Paradise, Lancaster.
Hertz, J. K., Litiz, Lancaster.
Hewitt, Geo. A., Philadelphia.
Hewson, Addinell, Philadelphia.
Hewson, A. Jr., Philadelphia.
Heyl, Albert G., Philadelphia.
Hibler, Augustus, Bellefonte, Centre.
Hice, E. C., Muhlenberg, Luzerne.
Hickman, J. W., Della, York.
Hickman, N. B., Philadelphia.
Highley, Geo. N., Conshohocken, Montgomery.
Hilderbrand, C. G., Winterstown, York.
Hill, G. A., Williamsport, Lycoming.
Hill, Geo., Hughesville, Lycoming.
Hilliard, G. H., Richardsville, Jefferson.
Hillier, J. W., West Middlesex, Mercer.
Hillis, W. J., Barclay, Pa.
Hinchman, W. A., Dry Run, Franklin.
Hine, E. C , Philadelphia.
Hines, E. P., Great Bend Boro, Susquehanna.
Hinkle, A. G. B., Philadelphia.
Hobday, Wm. A., Alton, McKean.
Hoffa, J. P., Washingtonville, Montour.
Hogue, D. A., Houtzdale, Clearfield.
Hoffman, C. J., Weatherly, Carbon.
Hoffmann, K. M., Clintonville, Venango.
Holahan, John F., York, York.
Holcomb, C., Lehigh Tannery, Carbon.
Holley, S. L., Nauticoke, Luzerne.
Holopeter, W. C., Philadelphia.
Holt, J. F., Philadelphia.
Homet, Volney, Camptown, Bradford.
Hooke, B. P., Loysville, Perry.
Hooper, Wm. H., Philadelphia.
Hoover, A. M., Parker, Armstrong.
Hoover, N. M., North Hope, Butler.
Hope, R. M., Mercer, Mercer.
Hopkins, Ephraim, Marshalton, Chester.
Horn, C. T., Lehighton, Carbon.
Horn, Jos., Mauch Chunk, Carbon.
Horn, H., Coplay, Lehigh.
Hornbeck, M. E., Catasauqua, Lehigh.
Horner, Caleb W., Philadelphia.
Horner, Chas., Gettysburg, Adams.
Horner, Joseph H., Thornton, Delaware.
Horner, Robert, Gettysburg, Adams.
Horst, M. W., Earlville, Lancaster.
Horton, Geo. F., Terrytown, Bradford.
Hosack, J. P., Mercer, Mercer.
Hoskins, Percy, Milltown, Chester.
Hottenstein, C. D., Philadelphia.
Houston, J. Willis, Oxford, Chester.
Howell, W. M., Cogan Station, Lycoming.
Howland, C. A., Shippensburg, Cumberland.
Huffman, D. C., McKeesport, Allegheny.
Hughes, Dan. E., Philadelphia.
Hughes, Donnel, Philadelphia.
Hughes, John W., Blairsville, Indiana.
Hughes, M. B., Shickshinny, Luzerne.
Huidekoper, H. S., Philadelphia.
Hull, A. P., Montgomery, Lycoming.
Hull, Wm. R., Williamsport, Lycoming.
Hull, Geo. S., Chambersburg, Franklin.
Hulshizer, A. H., Philadelphia.
Hummel, C. C., Mechanicsburg, Cumberland.
Humphrey, W. G., Osceola, Tioga.
Humphrey, Wm. T., Osceola, Tioga.
Humphreys, G. L., Irvin, Westmoreland.
Hunsberger, W. E., Maiden Creek, Berks.
Hunt, J. S., Easton, Northampton.
Hunt, William, Philadelphia.
Hunter, C. T., Philadelphia.
Hunter, R. P., Leechburg, Armstrong.
Hunter, William A., Upper Strasburg, Franklin.
Hurlbut, C. S., Lewistown, Mifflin.
Huselton, W. S., Allegheny City, Alle.
Hursh, G. R., Harrisburg, Dauphin.
Hurst, M. W., Earlville, Lancaster.
Hutchinson, Jas. H., Philadelphia.
Hutton, J. C. Harrisburg, Dauphin.
Hyson, J. M., Red Lion, York.

Ingraham, T. D., West Chester, Chester.
Ingram, N. Blossburg, Tioga,
Irwin, Crawford, Hollidaysburg, Blair.

Irwin, R. C., Hollidaysburg, Blair.
Irwin, Wm. Breakneck, Butler.
Irwin, W. B., Churchtown, Lancaster.
Isett, F. S., Philadelphia.
Ivison, John, Philadelphia.

Jackson, Edw., West Chester, Chester.
Jackson, Isaac, ———, Fayette.
Jackson, T. M., Hadley, Mercer.
Jacob, Harry, Altoona, Blair.
Jacobs, G. L., Harrisburg, Dauphin.
Jacobs, W. A., Centre Hall, Centre.
Janney, Wm. S., Philadelphia.
Jefferis, D. W., Media, Delaware.
Jefferis, E. P., Philadelphia.
Jennings, S. D., Beers, Allegheny.
Jennings, W. H., Blossburg, Tioga.
Jessop, C. J., Kittanning, Armstrong.
Jessup, S. A. S., Kittanning, Armstrong.
Johnson, C. H., Barclay, Bradford.
Johnson, Russell H., Philadelphia.
Johnson, S. C., Limestone, Clarion. (Jeff.)
Johnson, T. B., Towanda, Bradford.
Johnston, A. D., Slate-lick, Armstrong.
Johnston, J. W., Claysburg, Blair.
Johnston, Thos. L., Duncannon, Perry.
Jones, Jno. Harris, Plymouth, Luzerne.
Jones, M. D., Pittsburg, Allegheny.
Judd, L. D., Philadelphia.

Kain, John B., Manchester, York.
Kamerer, J. W. B., Greensburg, Westmoreland.
Kanawell, J. F., Penn's Creek, Snyder.
Katz, Harvey, Hilltown, Bucks.
Kay, T. M., Columbia, Lancaster.
Keating, John M., Philadelphia.
Keating, Wm. V., Philadelphia.
Keeler, M. Z., Harleysville, Montgomery.
Keen, W. W., Philadelphia.
Keiffer, S. B., Carlisle, Cumberland.
Keim, C. J., Catasauqua, Lehigh.
Keir, W. G., Philadelphia.
Keiser, P. D., Mahoning, Carbon.
Keller, D. C., Union Deposit, Dauphin.
Kelly, Jos. V., Philadelphia.
Kemp, Agnes, Harrisburg, Dauphin.
Keneagy, S., Strasburg, Lancaster.
Kendig, B. F., Salunga, Lancaster.
Kerlin, Isaac N., Elwyn, Delaware.
Kern, P. M., Bath, Northampton.
Kerr. Geo., Philadelphia.
Kerr, Jas., Pittsburg, Allegheny.
Kerr, Jas. W., Allegheny, Allegheny.
Kerr, J. W., York, York.
Kersting, Theo. Breakneck, Butler.
Kestler. D., Summit Hill, Carbon.
Keyser, Peter D., Philadelphia.
Kibler, Chas. B., Corry, Erie.
King, C. B., Allegheny City, Allegheny.
King, J. C., Reynoldsville, Jefferson.
King, J. H., Saxonsburg, Butler.
Kilbourn, H. B., Franklindale, Bradford.
Kilduff, Robt., Philadelphia.
Kirkbride, M. F., Philadelphia.
Kirkbride, Thos. S., Philadelphia.
Kirker, John, Allegheny City, Allegheny.
Kifer, L. M., Irwin, Westmoreland.
Kirkpatrick, M. B., Philadelphia.
Klapp, Joseph, Philadelphia.
Kline, G. W., Stormstown, Centre.
Kline, I. Y., Clay, Lancaster.
Kline, L. B., Catawissa, Columbia.
Kline, Wm. O., Jr., Philadelphia.
Klingensmith, I. P., Derry Station, Westmoreland.
Knapp, C. B., Stevensville, Bradford.
Knapp, C. P., Wyoming, Luzerne.
Knapp, J. J., ———, Warren.
Knecht, Cyrus, Easton, Northampton.
Knight, Samuel R., Philadelphia.
Knipe, Jacob O., Norristown, Montgomery.
Knox, Wm. F., McKeesport, Allegheny.
Koch, J. G., Petersville, Northampton.
Kœller, Frank, Pittsburg, Allegheny.
Kohler, J., New Holland, Lancaster.
Koons, P. R., Allen, Cumberland.
Kotz, A. L., Easton, Northampton.
Krause, J. H., Plumsteadville, Bucks.
Kreiter, J. S., Litiz, Lancaster.
Krise, C. W., Carlisle, Cumberland.
Kugler, Annie, Norristown, Montgomery.
Kuhn, L. DeB., Reading, Berks.
Kurtz, S. L., Reading, Berks.
Kurtz, J. Ellis, Reading, Berks.
Kutz, W. L., Parryville, Carbon.

Lachenour, H. G., Easton, Northampton.
Ladd, C. K., Towanda, Bradford.
Ladd, Horace, Philadelphia.
Lamb, F. D., Great Bend Village, Susquehanna.
Landesberg, Max, Philadelphia.
Landis, J. A., Hollidaysburg, Blair.
Lane, Samuel G., Chambersburg, Frank.
Langdon, D. J., Ashland, Schuylkill.
Lange, C., Pittsburg, Allegheny.
Langfitt, W. J., Allegheny, Allegheny. (Beaver.)
Larimer, W. F., West Lebanon, Indiana.
Latham, P. H., Weatherly, Carbon.
Laubach, Stephen, Easton, Northampton.
Lawall, L. H., Bethlehem, Northampton.
Lawson, T. C., Brookville, Jefferson.
Leadenham, Jos. W. Knox P. O., Clarion.
Leaman, B., Leaman Place, Lancaster.
Leaman, Henry, Philadelphia.
Lee, Benjamin, Philadelphia.
Lee, Bernard R., Reading, Berks.
Lee, J. M., Pittsburg, Allegheny.
Lee, Jno. G., Philadelphia.
Leedom, Edwin C., Plymouth Meeting, Montgomery.
Leet, F. H., Greenville, Mercer.
Leffmann, Henry, Philadelphia.
Leidy, Joseph, Philadelphia.
Leidy, Philip, Philadelphia.
Le Moyne, F., Pittsburg, Allegheny.
Lenher, L. H., Mechanicsburg, Cumberland.
Leonard, R., Mauch Chunk, Carbon.
Levan, J. R., Philadelphia.
Levis, Richard J., Philadelphia.
Lightner, J. M., Ephrata, Lancaster.
Lilly, V. H., McSherrystown, Adams.
Lincoln, S. W., Nelson, Tioga.
Lineaweaver, J. K., Columbia, Lancaster.
Linn, Geo. A., Monongahela City, Washington.
Linn, G. W., Philadelphia.
Lippincott, J. A., Pittsburg, Allegheny.
Little, Wm. S., Philadelphia.
Livingston, E. E., —— Warren.
Livingston, J. B., West Middlesex, Mercer.
Livingston, T. M., Mountville, Lancaster.
Livingston, A. T., Philadelphia.
Lochman, Luther M., York, York.
Loder, P. E., Philadelphia.
Loeling, G. E., Philadelphia.
Long, Alfred A., York, York.
Long, R. P., Mechanicsburg, Cumberland.
Longsdorf, W. H., Dickinson, Cumberland.
Longshore, J. B., Beaver Meadow, Carbon.
Longstreth, Morris, Philadelphia.
Longstreth, M. Fisher, Sharon Hill, Delaware.
Loop, A. M., Nelson, Tioga.
Loop, D. D., North East, Erie.
Lopez, J. H., Philadelphia.
Lovett, Arthur S., Erie, Erie.
Lowson, L. C., Greenville, Mercer.
Luce, C. G., Reading, Berks.
Ludlow, J. L., Philadelphia.
Lumley, Geo. D., Williamsport, Lycoming.
Lusk, Amos, Zelienople, Butler.
Lusk, Jos. S., Harmony, Butler.

Lyman, J. W., Towanda, Bradford.
Lyon, Chas. L., Montourville, Lycoming.
Lyon, Edward, Williamsport, Lycoming.
Lyon, Thomas, Williamsport, Lycoming.
Lyons, Wm., Philadelphia.
Lytle, G. E., Monongahela City, Washington.

Mabon, Thos., Allegheny City, Alleg'y.
Macavoy, John, Philadelphia.
MacBride, Isaac, Philadelphia.
MacCord, G. T., Pittsburg, Allegheny.
MacFarlane, J. W., Pittsburg, Allegheny.
Mackres, H. O., Corry, Erie.
Maclay, David, Green Village, Franklin.
Macomber, N. S., Philadelphia.
McAdam, Alex. H., Philadelphia.
McBride, J. B., Columbia, Lancaster.
McCaa, D. J., Ephrata, Lancaster.
McCall, C. A., Philadelphia.
McCann, Jas., Pittsburg, Allegheny.
McCarrel, D., Hickory, Washington.
McCarrel, J. F., Eldersville, Washington.
McCarrell, Jas., Allegheny City, Allegheny.
McCasky, C. A., Barnhart's Mills, Butler.
McCauley, A., Sligo, Clarion.
McCauley, R. E., Apollo, Armstrong.
McChesney, A., Shelocta, Indiana.
McChesney, Robert, Shelocta, Indiana.
McClellan, Geo., Philadelphia.
McClelland, Cochran, Philadelphia.
McClelland, R. M., Philadelphia.
McClure, W. H., York, York.
McCollin, S. M., Philadelphia.
McCombs, R. S., Philadelphia.
McCombs, S. F., St. Petersburg, Clarion.
McConnell, H. S., New Brighton, Beaver.
McConoughy, D. W., Latrobe, Westmoreland.
McConoughy, Jas., Mt. Pleasant, Westmoreland.
McConoughy, Robt., Mt. Pleasant, Westmoreland.
McCormick, H. G., Montoursville, Lycoming.
McCoy, Alex. W., Philadelphia.
McCoy, Gilbert R., Doylestown, Bucks.
McCoy, H. L., Smethport, McKean.
McCracken, G. Y., Philadelphia.
McCready, J. A., Pittsburg, Allegheny.
McCready, R. J., Allegheny, Allegheny.
McCrystal, John, Minersville, Schuylkill.
McCulloch, J. T., Freeport, Armstrong.
McCullough, T. C., Oil City, Venango.
McCurdy, R. L., Freeport, Armstrong.
McCurdy, W. H., Slate Hill, York.
McDonald, Nesbit, Pittsburg, Allegheny.
McDonough, H. H., Vanceville, Washington.
McDowell, S. B., Philadelphia.
McElrath, J. B., Jackson Centre, Mercer.
McElree, A. S., Washington, Washington.
McElroy, B. F., Philadelphia.
McElroy, J., Hickory, Washington.
McFerran, Jas. A., Philadelphia.
McGeehan, W., New Galilee, Beaver.
McGill, P., Williamstown, Dauphin.
McGowan, W. D., Ligonier, Westmoreland.
McGowen, H., Harrisburg, Dauphin.
McIlwaine, Chas. H., Philadelphia.
McInich, L., West Freedom, Clarion.
McIntire, Chas., Jr., Easton, Northampton.
McKean, John A., Washington, Washington.
McKee, J. C., Slate-lick, Armstrong.
McKee, J. W., Cochran's Mill, Armstrong.
McKelvey, W. H., Pittsburg, Allegheny.
McKelvy, J. B., Bloomsburg, Columbia.
McKelvy, Wm., Jerseytown, Columbia.
McKennan, H. S., Washington, Washn.
McKennan, Thos., Washington, Washn.
McKenzie, Wm., Mingo, Montgomery.
McKibben, David J., Ashland, Schuylkill.
McKibbon, J. A., Allegheny City, Allegheny. (Jefferson.)
McKim, V. I., Lewistown, Mifflin.
McKinney, D., New Brighton, Beaver.
McKinnon, M. J., York, York.
McLanahan, T. J., Chambersburg, Franklin.
McLean, H. D., Philadelphia.
McLina, C., New Bethlehem, Clarion.
McMorris, N. C., Duncannon, Perry.
McMullen, Thos., Penn Run, Ind.
McMurray, Andrew S., Philadelphia.
McNary, H. A., Pittsburg, Allegheny.
McNeil, Geo. W., East End, Allegheny.
McNutt, G. F., Sheffield, Warren.
McPheeters, W D., Hookstown, Beaver.
McRean, Thomas A., Philadelphia.
McReynolds, H. W., Bloomsburg, Columb.
Madden, W. S., Lewistown, Mifflin.
Magill, Wm. H., Danville, Montour.
Mahon, Jos. T., Newton Hamilton, Mifflin.
Maine, G. D., Mainesburg, Tioga.
Malloy, J. D., Bradford, McKean.
Mann, Chas., Bridgeport, Montgomery.
Marchant, Jas. I., Irwin, Westmoreland.
Marland, T. J., Shelocta, Indiana.
Marquis, D. S., Rochester, Beaver.
Marsh, F. L., Mt. Pleasant, Westmoreland.
Marshall, D. S., Ashland, Schuylkill.
Marshall, R. P., Orrsville, Armstrong.
Martin, A. J., Allentown, Lehigh.
Martin, E. G., Allentown, Lehigh.
Martin, E. W., Pittsburg, Allegheny.
Martin, H. G., Cherry Flats, Tioga.
Martin, J., Philadelphia.
Martin, Thos., Allentown, Lehigh.
Massey, G. B., Philadelphia.
Massey, Isaac, West Chester, Chester.
Masten, James, Westfield, Tioga.
Matter, R. M., Elderton, Armstrong.
Mathews, Jas. M., Temple, Berks.
Mathiot, H. B., Smithfield, Fayette.
Mason, C. M., Brookville, Jefferson.
Matson, W. F., Brookville, Jefferson.
Matter, G. F., Williamstown, Dauphin.
Matterson, D. E., Bradford, McKean.
Mausteller, Jas. D., Danville, Montour.
Maxwell, J. K., Worthington, Armstrong.
Mayer, Edw. R., Wilkesbarre, Luzerne.
Mayer, I. H., Willowstreet, Lancaster.
Mays, Thos. J., Upper Lehigh, Luzerne.
Meals, E. S., Harrisburg, Dauphin.
Meals, N. M., Callensburg, Clarion.
Meals, S. D., Callensburg, Clarion.
Means, W. A., Du Bois, Clearfield.
Mears, J. Ewing, Philadelphia.
Mehard, Jas. W., Mercer, Mercer.
Mehard, S. S., Mercer, Mercer.
Meigs, Arthur V., Philadelphia.
Meigs, John Forsythe, Philadelphia.
Meisenhelder, Edw. W., York, York.
Melhorn, E., New Chester, Adams.
Melsheimer, E. L., Dillsburg, York.
Mercur, Jno. D., Philadelphia.
Merklein, C. H., Chambersburg, Franklin.
Meschter, Geo. K., Centre Point, Montgomery.
Metzler, S. N., Phœnix, Armstrong.
Miller, A. M., Bird-in-Hand, Lancaster.
Miller, Chris. H., Philadelphia.
Miller, D. P., Huntingdon, Huntingdon.
Miller, D. W., Adamsburg, Westmoreland.
Miller, E. S., Altoona, Blair.
Miller, J. M., East Texas, Lehigh.
Miller, O. L., Allegheny City, Allegheny.
Miller, W. N., Pittsburg, Allegheny.
Milligan, J. D., Madison, Westmoreland.
Milliken, D. R., Landisburg, Perry.
Milner, R. H., Chester, Delaware.
Mills, Charles K., Philadelphia.
Mills, Edward, Ulster, Bradford.
Mingle, D. H., Millheim, Centre.
Minnich, A. K., Philadelphia.
Mish, Geo. F., Middletown, Dauphin.
Mitchell, S. Weir, Philadelphia.

Mixsell, Jos., Easton, Northampton.
Moffet, Wm., Philadelphia.
Montelius, R. W., Mt. Carmel, Northumld. (Schuylkill.)
Montgomery, E. E., Philadelphia,
Montgomery, John, Chambersburg, Franklin.
Montgomery, Wm. H., Leechburg, Armstrong.
Moody, Benj., Mansfield, Tioga.
Moody, G. O., Titusville, Crawford.
Moon, Wm. P., Philadelphia.
Moore, E. W., Franklin, Venango.
Moore, J. E., Emlenton, Venango.
Moore, Jas. W., Easton, Northampton.
Moore, Jno. R., Burrell, Westmoreland.
Morehouse, E. R., Philadelphia.
Morey, J., Royersford, Montgomery.
Morris, E. K., Eldred, McKean.
Morris, F. G., Liverpool, Perry.
Morris, J. Cheston, Philadelphia.
Morrison, M. P., Monongahela City, Washington.
Morrow, W. L., Freeport, Armstrong.
Mosser, E. N., Mechanicsburg, Cumberland.
Mossman, B. E., Greenville, Mercer.
Mowery, J. L., Conestoga, Lancaster.
Mowry, R. B., Allegheny City, Allegheny.
Muhlenberg, Frank, Philadelphia.
Muhlenberg, H. E., Lancaster, Lancaster.
Muhlenberg, Wm. F., Reading, Berks.
Muller, A. F., Philadelphia.
Mumma, E. W., Bendersville, Adams.
Murdoch, F. H., Bradford, McKean.
Murdock, J. B., Allegheny City, Alleg'y.
Murphy, J. A., Wilkesbarre, Luzerne.
Murray, F. Marion, Lenni, Delaware.
Musser, Benj., Strasburg, Lancaster.
Musser, C. S., Aaronsburg, Centre.
Musser, F. M., Lancaster, Lancaster
Musser, J. H., Philadelphia.
Musser, H. E., Witmer, Lancaster.
Musser, J. H., Lampetre, Lancaster.
Musser, P. T., Aaronsburg, Centre.
Myer, L. G., Pardoe, Mercer.

Nancrede, Chas. B., Philadelphia.
Nash, Joseph D., Philadelphia.
Nebinger, Andrew, Philadelphia.
Neely, J. W., Pittsburg, Allegheny.
Neff, George W., — Fayette.
Neff, Jos. F., Philadelphia.
Nelan, J. R., Brownsville, Fayette.
Newbaker, P. C., Washingtonville, Montour.
Newcomet, H. W., Philadelphia.
Newpher, J. L., Mt. Joy, Lancaster.
Newton, F. G., Towanda, Bradford.
Newton, D. N., Towanda, Bradford.
Neyman, A. M., Butler, Butler.
Nipple, H. M., Freeburg, Snyder.
Noble, Wm. P., Upton, Franklin.
Noel, A., Bonneauville, Adams.
Nolan, Edward J., Philadelphia.
Norris, H. E., Marietta, Lancaster.
Nutt, G. D., Williamsport, Lycoming.

O'Connor, H. R., Pittsburg, Allegheny.
O'Farrell, G. D., Philadelphia.
Ogleby, Jas., Danville, Montour.
O'Hara, Michael, Philadelphia.
Oliver, Chas. A., Philadelphia.
O'Neal, J. W. C., Gettysburg, Adams.
O'Neil, John J., Philadelphia.
O'Neill, F. X., Philadelphia.
Orris, H. O., Newport, Perry.
Orth, H. L., Harrisburg, Dauphin,
Osborne, A. Edgar, Media, Delaware.
Osler, Owen, Philadelphia.
Ott, Isaac, Easton, Northampton.
Ott, Lambert, Philadelphia.
Otto, J. V., Port Allegheny, McKean.
Owens, Wm. R., Ashland, Schuylkill.
Oyler, W. H., McKnightstown, Adams.

Packard, John H., Philadelphia.
Packer, Nelson, Wellsboro', Tioga.
Paine, D. L., New Bethlehem, Clarion. (Jefferson.)
Palmer, C. T., Pottsville, Schuylkill.
Palmer, Chas., Chambersburg, Franklin.
Pancoast, Wm. H., Philadelphia.
Parcels, W. H., Lewistown, Mifflin.
Parish, W. H., Philadelphia.
Park, J. W., Williamstown, Dauphin.
Parke, A. G. B., Gap, Lancaster.
Parker, W. C., Mansfield Valley, Allegheny.
Parr, G. W., Clintonville, Venango.
Partenheimer, J. R., Philadelphia.
Partridge, C. L., Ridley Park, Delaware.
Patrick, E., West Whiteland, Chester.
Patton, N. N. P., Pittsburg, Allegheny.
Payne, E. D., Towanda, Bradford.
Pearson, J. W., Petersburg, Adams.
Pearson, J. S., Philadelphia.
Peltz, Josiah, Philadelphia.
Pennepacker, H., Harford, Susquehanna.
Pepper, Wm., Philadelphia.
Perdue, Wm. R., Unionville, Chester.
Perkins, E. S., Philadelphia.
Perkins, J. T., York, York.
Perkins, F. M., Philadelphia.
Perry, Hext. M., Philadelphia.
Pettigrew, S. H., Du Bois, Clearfield.
Pfouts, Geo. I., Jersey Shore, Lycoming.
Phelps, W. C., Philadelphia.
Philips, E. F., Tower City, Schuylkill.
Phillips, Ellis, —— Fayette.
Phillips, Jno. S., Allegheny, Allegheny.
Phillips, J. W., Clifton Heights, Delaware.
Phister, Benjamin, Philadelphia.
Pickett, M., Corry, Erie.
Piersol, Geo. A., Philadelphia.
Pillow, R. H., Butler, Butler.
Plank, E., Christiana, Lancaster.
Pollock, A. M., Pittsburg, Allegheny.
Porter, Wm. G., Philadelphia.
Potsdamer, Geo. B., Philadelphia.
Pownall, H. W., Atglen, Chester.
Praeger, H. F., Bethlehem, Northampton.
Prall, C. R., Philadelphia.
Preston, Geo., Kane, McKean. (Warren.)
Prevost, L. W., Buck Mount, Carbon.
Price, Jacob, West Chester, Chester.
Price, Mordecai, Philadelphia.
Price, Henry R., Kennett Square, Chester.
Prowell, W. R., Siddonsburg, York. (Cumberland).
Purington, A. F., Indiana, Indiana.
Pursell, Isaac, Danville, Montour.
Putt, M. O., Churchville, Dauphin.

Quail, Chas. E., Auburn, Schuylkill.
Quick, P. A., Sugar Run, Bradford.

Rahauser, Geo. G., Pittsburg, Allegheny.
Rahter, C. A., Harrisburg, Dauphin.
Ramsey, R. W., St. Thomas, Franklin.
Ramsey, W. S., West Bridgewater, Beaver.
Ranck, Chas. B., Philadelphia.
Randall, — New Bethlehem, Clarion.
Randall, A. Z., Erie, Erie.
Randall, B. A., Philadelphia.
Randenbash, Abraham, Adamstown, Lancaster. (Berks.)
Rankin, D. N., Allegheny City, Allegheny.
Rankin, M. M., Rockdale Mills, Jefferson.
Rankin, W. D., Allegheny, Allegheny.
Raub, Jno. A., Philadelphia.
Rea, Jas. C., Pittsburg, Allegheny.
Read, Lewis W., Norristown, Montgomery.
Reagan, G. L., Shenandoah, Schuylkill.
Reber, W. M., Bloomsburg, Columbia.
Rebman, G. A., Wrightsville, York.
Redick, Samuel T., Allegheny, Allegheny.
Reed, A. G., Philadelphia.
Reed, C. H., Wysox, Bradford.
Reed, F. B., Osceola, Clearfield.

Reed, J. H., Sharon, Mercer.
Reed, Jos. A., Dixmont, Allegheny.
Reeves, O., Nesquehoning, Carbon.
Reichard, C. C., Brownsville, Fayette.
Reichard, P. L., Allentown, Lehigh.
Reid, A. M., Clarion, Clarion.
Reid, J. K., Conshohocken, Montgomery.
Reily, W. F., Carlisle, Cumberland.
Reilly, Geo. W., Harrisburg, Dauphin.
Reimsnyder, B. F., Hinkletown, Lancaster.
Reiter, W. C., Pittsburg, Allegheny.
Rentschler, H. D., Ringtown, Schuylkill.
Reuter, G. N., Benvenue, Dauphin. (Perry.)
Rex, Geo. A., Philadelphia.
Rex, O. P., Philadelphia.
Rex, T. A., Pittsburg, Allegheny.
Rhea, A. R., Sharpsville, Mercer.
Rhodes, Almira F., Meadville, Crawford.
Rhorer, T., Queensville, Lancaster.
Rice, J. N., Pittston, Luzerne.
Rich, Thos. C., Philadelphia.
Richardson, E., Philadelphia.
Richardson, Joseph G., Philadelphia.
Richardson, W. L., Montrose, Susquehanna.
Richter, Aug., Williamsport, Lycoming.
Rickards, W. M. L., Philadelphia.
Riggs, E. S., Allegheny, Allegheny.
Riggs, D. W., Allegheny, Allegheny.
Riggs, W. J., Beaver, Beaver.
Righter, W., Columbia, Lancaster.
Risley, S. D., Philadelphia.
Ritchey, John A., Oil City, Venango.
Ritter, F. D., Gaines, Tioga.
Roberts, A. S., Philadelphia.
Robbins. E. S. Covington, Tioga.
Roberts, John B., Philadelphia.
Robins, E. S., Shamokin, Northumberland.
Robins, J. K., Catawissa, Columbia.
Robins, O. M., Shamokin, Northumberland, (Schuylkill.)
Robins, W. A., Catawissa, Columbia.
Robinson, F. C., Fayette.
Robinson, Jas., Pittsburg, Allegheny.
Roebuck, J. K., Bethlehem, Northampton.
Rockwell, O. H., Monroeton, Bradford.
Roebuck, P. J., Litiz, Lancaster.
Rogers, J. J., Huntsville, Luzerne.
Rogers, Robert E., Philadelphia.
Rogers, Wm., Gibson, Susquehanna.
Roland, O., Lancaster, Lancaster.
Roland, W. S., York, York.
Roller, W. C., Hollidaysburgh, Blair.
Roop, J. W., New Cumberland, Cumberland.
Rose, David, Chester, Delaware.
Ross, I. E., Wilkesbarre, Luzerne.
Ross, James, Clarion, Clarion.
Ross, John D., Williamsburg, Blair.
Ross, J. Frank, Clarion, Clarion.
Ross, Samuel M., Altoona, Blair.
Ross, T. D., Duke Centre, McKean.
Ross, W. S., Altoona, Blair.
Rothrock, A., McVeytown, Mifflin.
Rothrock, J. T., West Chester, Chester.
Rothrock, Marand, Mt. Pleasant Mills, Snyder.
Rothrock, Roswell, Middleburg, Snyder.
Rothrock, S. H., McVeytown, Mifflin.
Rouse, Sam'l J., York, York.
Rugh, W. J., Manor Dale, Westmoreland.
Rupp, H., Hummelstown, Dauphin.
Russ, Eben J., St. Mary's, Elk.
Rutledge, S. R., Blairsville, Indiana.

Saeger, G. C., Montoursville, Lycoming.
Sajous, C. E., Philadelphia.
Sample, John, Wilkinsburg, Allegheny.
Sampsell, J. W., Penn's Creek, Snyder.
Samuels, Edw., Mt. Carmel, Northumberland. (Schuylkill.)
Sandt, John, Easton, Northampton.
Sandt, Samuel, Easton, Northampton.
Sangston, J. P., Masontown, Fayette.
Santee, Eugene I., Philadelphia.
Sargent, Gorham P., Bryn Mawr, Montgomery.
Sarver, Wm., Allegheny City, Allegheny.
Saul, C. H., Steelton, Dauphin.
Savery, Wm., Bryn Mawr, Montgomery.
Saylor, Jean S., Williamsport, Lycoming.
Schaffer, Chas., Philadelphia.
Schapringer, A., Philadelphia.
Scheidt, P. M., Philadelphia.
Schell, H. S., Philadelphia.
Schmauser, T., Allegheny, Allegheny.
Schoales, J. D., Philadelphia.
Schofield, E. Lane, Wiconisco, Dauphin.
Schoonmaker, P., Hopbottom, Susq.
Schott, Arnold, Philadelphia.
Schrack, David, Jeffersonville, Montgomery.
Schrack, John, Jeffersonville, Montgomery.
Schultz, S. S., Danville, Montour.
Scott, C. H., Athens, Bradford.
Scott, F. P., Monongahela City, Washington.
Scott, J. B., Gettysburg, Adams.
Scott, J. Y., East Bethlehem, Washington.
Scroggs, Jas., Jr., Beaver, Beaver.
Seabrooks, C. C., Harrisburg, Dauphin.
Seabury, W. W., Sugar Grove, Warren.
Seaman, John K., Lenhartsville, Berks.
Seeley, A. H., Woodhut, Tioga.
Seem, Albert A., Bangor, Northampton.
Seem, A. K., Martin's Creek, Northampton.
Seiberling, F. C., Lynnsville, Lehigh.
Seibert, J. P., Chambersburg, Franklin.
Seibert, W. H., Baldwin, Dauphin.
Seiler, Carl, Philadelphia.
Seiler, J. P., Harrisburg, Dauphin.
Seip, Amos, Easton, Northampton.
Seip, M. S., Easton, Northampton.
Seip, W. H., Bath, Northampton.
Seiple, S. C., Centre Square, Montgomery.
Seiss, R. S., Littlestown, Adams.
Seltzer, C. M., Philadelphia.
Senderling, P. M., Berwick, Columbia.
Sensenig, J. B., Witmer, Lancaster.
Senseny, E. N., Chambersburg, Franklin.
Seyfert, Theo. H., Philadelphia.
Shaeffer, J. H., Farmersville, Lancaster.
Shakspeare, E. O., Philadelphia.
Shapleigh, E. B., Philadelphia.
Shattuck, Geo. F., Philadelphia.
Shaw, Thos. W., Pittsburg, Allegheny.
Shaw, W. C., Pittsburg, Allegheny.
Sheaffer, A. H., Lewistown, Mifflin.
Shearer, Jas. Y., Sinking Spring, Berks.
Sheeder, P. J. S., Shermansdale, Terry.
Sheets, H. W., So. Bethlehem, Northampton.
Sheetz, J. L., New Oxford, Adams.
Sheibly, J. P., Landisburg, Perry.
Sheller, Adam, Mount Joy, Lancaster.
Shelly, A. F., Philadelphia.
Shenk, D. H., Rohrerstown, Lancaster.
Shenk, J. H., Litiz, Lancaster.
Shepler, J. T., Dunbar, Fayette.
Sherman, A. B., Girardville, Schuylkill.
Sheppard, F. C., Philadelphia.
Shilleto, G. M., Allegheny City, Alleg'y.
Shindel, Jno. Y., Middleburg, Snyder.
Shirk, J. M., Lancaster, Lancaster.
Shirk, Levi A., Fredericksburg, Lebanon. (Berks.)
Shimmel, B. F., Philadelphia. (Berks.)
Shive, P. C., Plains, Luzerne.
Shoemaker, B., Brownsville, Fayette.
Shoemaker, J. V., Philadelphia.
Shoemaker, Geo. G., Church P. O., Clarion.
Shoemaker, W. P., Bradford, McKean.
Short, R. N., Mechanicsburg, Cumberland.
Shrawder, John S., Fairview, Montg'y.
Shuey, J. H., Custar City, McKean.
Shull, John D., Markleville, Perry.
Shull, J. T., Transfer, Mercer.

Shugart, F. A., Tidioute, Warren.
Sibbet, R. L., Carlisle, Cumberland.
Silliman, James E., Erie, Erie.
Simington, R. S., Danville, Montour.
Simsohn, Jos. S., Philadelphia.
Simpson, Theo. P., Beaver Falls, Beaver.
Simpson, W. C., New Brighton, Beaver.
Simes, J. H. C., Philadelphia.
Simon, T. W., Philadelphia.
Singer, J. J., Connellsville, Fayette.
Sinkler, W., Philadelphia.
Skillern, S. R., Philadelphia.
Skillern, P. G., Philadelphia.
Skilling, M. J., Philadelphia.
Sloan, J. G., Monongahela, Washington.
Smaltz, J. Henry, Philadelphia.
Smathers, W. J., Du Bois, Clearfield.
Smith, A. H., Paradise, Lancaster.
Smith, A. H., Philadelphia.
Smith, A. M., Beaver Springs, Snyder.
Smith, C. H., Linglestown, Dauphin.
Smith, E. N., Susquehanna Depot, Susquehanna.
Smith, G. W., Hollidaysburg, Blair.
Smith, H. A., Philadelphia.
Smith, Henry H., Philadelphia.
Smith, Jas. M., Tyrone, Blair.
Smith, J. K., Harrisburg, Dauphin.
Smith, J. R., Pine Grove Mills, Centre.
Smith, L. A., New Milford, Susquehanna.
Smith, Nelson M., Riverside, Northum'd. (Montour.)
Smith, Robert B., Tioga, Tioga.
Smith, Robt. Mead, Philadelphia.
Smith, S., Ardmore, Montgomery.
Smith, S. S., Driftwood, Cameron.
Smith, W. C. J., Pottsville, Schuylkill.
Smith, W. H., Intercourse, Lancaster.
Smock, E. L., Klecknersville, Northampton.
Snively, A. P., Hanover, York.
Snively, I. N., Waynesboro', Franklin.
Snively, Whitmer, Pittsburg, Allegheny.
Snodgrass, H. L., Buffalo Village, Washington.
Snodgrass, James H., Pittsburg, Allegheny.
Snowden, S. G., Franklin, Venango.
Spackman, R. V., Luthersburg, Clearfield.
Spangler, C. F., York, York.
Spangler, Benj. F., York, York.
Spangler, J. R., York, York.
Spaulding, S. C., Shenandoah, Schuylkill.
Speer, Alex., Pittsburg, Allegheny.
Spencer, C. A., Dallas, Luzerne.
Spencer, H. A., Erie, Erie.
Spratt, Geo. R., Coatsville, Chester.
Sprouls, I. N., Claysville, Washington.
Stahley, Geo. D., Harrisburg, Dauphin.
Staub, F. N., Pittsburg, Allegheny.
Stayer, A. S., Roaring Springs, Blair.
Stearly, J. B., Reading, Berks.
Stearns, J. S., Port Allegheny, McKean.
Stebbins, Sumner, Dugdale, Chester.
Steck, W. C., Glenvale, York.
Steele, F. C., New Buffalo, Perry.
Stehman, H. B., Lancaster, Lancaster.
Steinbach, L. W., Philadelphia.
Steinmetz, E. G., Hokendauqua, Lehigh. (Northampton.)
Stelwagon, H. W., Philadelphia.
Stem, P. S., Coplay, Northampton.
Stephens, A. R., Herrickville, Bradford.
Sterrett, J. P., Pittsburg, Allegheny.
Stetler, J. G., Philadelphia.
Stevenson, E. S., Pittsburg, Allegheny.
Stevenson, Jas. M., Pittsburg, Allegheny.
Stewart, J. L., Erie, Erie.
Stewart, J. S., Pittsburg, Allegheny.
Stewart, Reverdy B., Warren, Warren.
Stewart, R. C., Shippensburg, Cumberland.
Stewart, Richard B., Warren, Warren.
Stewart, S. C. Clearfield, Clearfield.
Stewart, T., Jr., Carlisle, Cumberland.
Stewart, Thos., Carlisle, Cumberland.
Stewart, Wm. G., Newville, Cumberland.
Stewart, Wm. H., Kittanning, Armstrong.
Stewart, W. S., Philadelphia.
Stiles, George W., Conshohocken, Montgomery.
Stille, Alfred, Philadelphia.
Stimpson, A. O., Thompson, Susquehanna.
Stine, Luther K., Philadelphia.
Stinson, Mary, Norristown, Montgomery.
Stockdale, T. F., Dayton, Armstrong.
Stocker, A. E., Philadelphia.
Stone, Edw. R., Philadelphia.
Stone, Jas. T., Philadelphia.
Stout, Abram, Bethlehem, Northampton.
Straessley, H., Kersey, Elk.
Straight, A. M., Wilcox, McKean (Warren).
Stranahan, C. W. Erie, Erie.
Stranahan, D. V., Warren.
Strange, W. W., Montrose, Susquehanna.
Strawbridge, Geo., Philadelphia.
Strawbridge, J. D., Danville, Montour.
Streeter, Wm., Custar City, McKean.
Strickler, M. B., New Bloomfield, Perry.
Strohecker, J. T., Beavertown, Snyder.
Stubbs, G. E., Philadelphia.
Subbs, Jas. H., London Grove, Chester.
Sturgeon, J. D., Uniontown, Fayette.
Sturgeon, Wm. H., Uniontown, Fayette.
Styer, Chas., Philadelphia.
Suesserott, J. L., Chambersburg, Franklin.
Suesserott, L. F., Chambersburg, Franklin.
Sullivan, Thos., Sharon, Mercer.
Sutton, R. S., Pittsburg, Allegheny.
Swartz, Jos., Duncannon, Perry.
Swartzlander, Frank, Doylestown, Bucks.
Swaving, J. G. C., Pottsville, Schuylkill.
Swayze, Geo. B. H., Philadelphia.
Swayze, Mary A., Pottsville, Schuylkill.
Sweet, K. A., Bradford, McKean.
Sweet, N., Bradford, McKean.
Swift, E. C., Easton, Northampton.
Swigart, J. R., Bannerville, Snyder.
Swing, E. V., Coatesville, Chester.
Swisher, T. J., Jerseytown, Columbia.
Swoyer, O. D., South Bethlehem, Northampton.

Taggart, David, Frackville, Schuylkill.
Tambaugh, L. H., Beallsville, Washington.
Taylor, I. N., Girard, Erie.
Taylor, J. Howard, Philadelphia.
Taylor, J. M., Philadelphia.
Taylor, L. H., Wilkesbarre, Luzerne.
Taylor, Thomas A., Pomeroy, Chester.
Taylor, Wm. T., Philadelphia.
Temple, W. C., Water Cure, Beaver.
Temple, J. C., Water Cure, Beaver.
Tewksberry, A. D., Ashley, Luzerne.
Thayer, Alvin, Erie, Erie.
Thickstun, G., Wattsburgh, Erie.
Thomas, A. G., Freeport, Armstrong.
Thomas, C. H., Philadelphia.
Thomas, J. D., Pittsburg, Allegheny.
Thomas, John G., Newtown Square, Delaware.
Thomas, O. W., Arendsville, Adams.
Thompson, Benj., Landenberg, Chester.
Thompson, C. K., Wellsboro', Tioga.
Thompson, H. A., Jersey Shore, Lycoming.
Thompson, J. A., Wrightsville, York. (Lancaster.)
Thompson, J. A., Snow Shoe, Centre.
Thompson, J. C., Bellwood, Blair.
Thompson, J. F., Liverpool, Perry.
Thompson, John, Ridgway, Elk (Jefferson.)
Thompson, L. M., Mahanoy City, Schuylkill.
Thompson, N. G., Brandywine Manor. Chester.
Thompson, Sidney, Spruce Creek, Huntingdon. (Blair.)
Thompson, Wm. R., Washington, Washington.
Thomson, Wm., Philadelphia.
Thorne, J. S., Mastersonville, Lancaster.

Thorne, W. B., Mastersonville, Lancaster.
Tidd, E. J., Clarksville, Mercer.
Tiffany, C. W., Brackney, Susquehanna.
Tingley, H. A., Susquehanna, Susquehanna.
Tobin, Thos., Williamsgrove, Clearfield.
Toboldt, A. L. A., Philadelphia.
Tomlinson, H. A., Jersey Shore, Lycoming.
Tomlinson, John, Montoursville, Lycoming.
Torbert, E. G., Driftwood, Cameron.
Torbert, J. S., Driftwood, Cameron.
Torrence, J. M., Indiana, Indiana.
Torrence, R., —— Fayette.
Trabert, J. W., Reamstown, Lancaster.
Tracy, E. G., Troy, Bradford.
Tracy, G. P., Burlington, Bradford.
Traver, A. J., Marysville, Perry.
Travers, D. B., Harrisburg, Dauphin.
Trautmann, B., Philadelphia.
Treacy, Dennis J., Philadelphia.
Treichler, A. C., Armsville, Lebanon. (Lancaster.)
Treichler, C. Galen, Honeybrook, Chester.
Trimble, Sam., Lima, Delaware.
Trimmer, S. W., White Haven, Luzerne.
Trimmer, J. W., Lisburn, Cumberland.
Troth, Samuel N., Philadelphia.
Troxell, E. R.. Pittston, Luzerne.
Turnbull, C. S., Philadelphia.
Turnbull, Laurence, Philadelphia.
Tweedle, J. B., Weatherly, Carbon.
Twitmire, J. H., Sharpsville, Mercer.
Tyson, A. R., Norristown, Montgomery.
Tyson, Jas., Philadelphia.

Uhler, T. M., Belfast, Northampton.
Ulrich, Wm. B., Chester, Delaware.
Umberger, J. R., Dauphin, Dauphin.
Umstead, J. R., Evansville, Montgomery.
Underwood, Gideon, Pittston, Luzerne.
Unger, D. F., Mercersburg, Franklin.
Urban, B. F. W., Lancaster, Lancaster.

Van Artsdalen, F. N., Tioga, Philadelphia. (Montgomery.)
Van Camp, J. E., Plainfield, Cumberland.
Vance, B. A., Darlington, Beaver.
Vanderslice, E. S., Philadelphia.
Vandyke, E. B., Philadelphia.
Van Kirk, T. R., McKeesport, Allegheny.
Van Tries, J. M., St. Thomas, Franklin.
Van Valzah, F. H., Spring Mills, Centre.
Van Valzah, H. B., Clearfield, Clearfield.
Van Valzah, T. Howard, Lewistown, Mifflin.
Van Valzah, W. W., Philadelphia.
Vanvoorhis, J. S., Bellevernon, Fayette.
Varian, Wm., Titusville, Crawford.
Vastine, J. H., Numidia, Montour.
Vaughan, J. E., Houtzdale, Clearfield.
Vedder, W. D., Mansfield, Tioga.
Vogler, Geo., Philadelphia.
Voight, C. H., Allegheny, Allegheny.

Waddel, W., Dushore, Sullivan, (Bedford.)
Waddelle, Jas. D., New Oxford, Adams.
Wagner, Jno. O., Beaver Springs, Snyder.
Wagner, W. H., York, York.
Wagenseller, B. F., Selinsgrove, Snyder.
Waggoner, D. R., McKean, Erie.
Waid, Adin P., Spartansburg, Crawford.
Walker, R. L., Mansfield, Allegheny.
Walker, Thos. H., Mercersburg, Franklin.
Wallace, Ellerslie, Philadelphia.
Wallace, J. A., Bradford, McKean.
Wallace, J. A., Pittsburg, Allegheny.
Wallace, W., Pittsburg, Allegheny.
Walsh, J. J., Pittston, Luzerne.
Walk, J. W., Philadelphia.
Walker, Jas. B., Philadelphia.
Walter, Joseph B., Centre Hill, Bucks.
Waters, D. C., Arnot, Tioga.
Watson, Edw. W., Philadelphia.
Waugh, W. F., Philadelphia.
Weaver, G. W., Duke Centre, McKean.
Weaver, H. F., Easton, Northampton.
Weaver, Jos. K., Norristown, Montgomery.
Weaver, J. G., Strasburg, Lancaster.
Weaver, R. T., Pottsville, Schuylkill.
Weaver, W. G., Wilkesbarre, Luzerne.
Weaver, W. P., Hanover, York.
Weaver, Samuel J., Weaversville, Northampton.
Webb, W. H., Philadelphia.
Webb, W. W., Wellsboro , Tioga.
Weber, Charles, Pricetown, Berks.
Weber, Chas. Z., Norristown, Montgomery.
Wehner, Jacob H., Philadelphia.
Weidman, W. Murray, Reading, Berks.
Weisel, Geo., Williamsport, Lycoming.
Welch, Wm. M., Philadelphia.
Welchans, G. W., Lancaster, Lancaster.
Wells, J. Ralston, Philadelphia.
Welsh, W. S., Franklin, Venango.
Welsh, D. Emmet, Latiobe, Westmoreland.
Wentz, W. J., New Providence, Lancaster.
Wentz, T. H., Kirkwood, Lancaster.
Werder, X. O., Pittsburg, Allegheny.
Weston, John B., Chester, Delaware.
Westlake, C. C., Cherrytree, Venango.
Wevill, Richard Henry, Philadelphia.
Weymouth, W. L., Renovo, Lycoming.
Whann, W. L., Franklin, Venango.
Wharton, H. R., Philadelphia.
Wharton, R. S., Philadelphia.
Wheeler, E. B., Philadelphia.
Whelen, Alfred, Philadelphia.
White, J. K., New Brighton, Beaver.
White, J. W., Philadelphia.
White, T. H., Williamsburg, Blair.
Whitcomb, H. H., Norristown, Montgomery.
Whitcomb, F. W., ——, Warren.
Whiteside, John E., Philadelphia.
Whitney, W. D., ——, Warren.
Whittier, G. M., Houtzdale, Clearfield.
Wick, A. J., New Bethlehem, Clarion.
Wiest, John, York, York.
Wiggins, S. L., Blacklick, Indiana.
Wiley, Eugene, Philadelphia.
Wiley, S. Nelson, Norristown, Montgomery.
Wiley, C. C., Dixmont, Allegheny.
Willard, De F., Philadelphia.
Williams, A. M., Bradford, McKean.
Williams, H., Philadelphia.
Williams, Roger, Pittsburg, Allegheny.
Williams, Walter L., Ridgway, Elk.
Williamson, Jesse, Philadelphia.
Willits, Chas., Philadelphia.
Wilmot, E. F., Great Bend Boro, Susquehanna.
Wilson, Benj. B., Philadelphia.
Wilson, C. G., St. Mary's, Elk.
Wilson, Elwood, Philadelphia.
Wilson, H. A., Sugar Run, Bradford.
Wilson, H. Aug., Philadelphia.
Wilson, Henry, Bradford, McKean.
Wilson, H. R., Portersville, Butler.
Wilson, J. F., Philadelphia.
Wilson, J. H., Beaver, Beaver.
Wilson, Jas. C., Philadelphia.
Wilson, W. R., Portersville, Butler.
Wiltrout, J. D., Schuylkill Haven, Schuylkill.
Winston, B., Curwensville, Clearfield.
Winters, Jos., Lower Merion, Montgomery.
Wireback, J. J., St. Petersburg, Clarion.
Wirgman, Chas., Philadelphia.
Wiseman, G. T., Bainbridge, Lancaster.
Wishart, H. S., Belleville, Mifflin. (Franklin.)
Wishart, J. W., Pittsburg, Allegheny.

Witherspoon, W. M., Shippensburg, Cumberland.
Witman, H. O., Harrisburg, Dauphin.
Witmer, I. M., Goodville, Lancaster.
Wittig, Chas. F., Philadelphia.
Wolfe, Samuel, Skippackville, Montgomery.
Wolford, L. M., Dillsburg, York.
Wolford, W. Scott, Philadelphia.
Wood, C. B., Monongahela City, Wash.
Wood, E. A., Pittsburg, Allegheny.
Wood, Geo. B., Philadelphia.
Wood, H. C., Philadelphia.
Woodburn, S. M., Towanda, Bradford.
Woodbury, Francis, Philadelphia.
Woods, A. A., Erie, Erie.
Woods, D. F., Philadelphia.
Woods, John F., Boalsburg, Centre.
Woods, L. N., Wheatland, Mercer.
Woods, W. W., Stanton, Jefferson.
Woodward, Chas. E., West Chester, Chester.
Worrell, J. W., —— Fayette.
Wright, J. H., Allegheny, Allegheny.
Wright, O. S., Bradford, McKean.
Wykoff, G. S., Bradford, McKean.

Yarrow, Thomas J., Philadelphia.
Yost, G. P., Loganville, York.
Young, Samuel, Allentown, Lehigh.
Young, Theo. J., Titusville, Crawford.

Zeigler, G. W., Carlisle, Cumberland.
Zeigler, S. P., Carlisle, Cumberland.
Ziegler, Geo. J., Philadelphia.
Ziegler, Jacob L., Mount Joy, Lancaster.
Ziegler, W. M. L., Philadelphia.
Zeiner, L. S., South Easton, Northampton.
Zorn, J. G., Weisport, Carbon.

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